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DOMESTIC ENGINEERING

The Plumbing and Heating Weekly

JULY
21,
1928

Left, a typical business district and, below, control board which regulates the flow of steam in a system of

District Heating

Fable of the Wolf *and the* Crane

A wolf, having a bone stuck in his throat, hired a crane to draw it out. Accomplishing this, the crane demanded the promised payment only to be assured that having been allowed to withdraw his head from a wolf's jaws was sufficient recompense.

—*Aesop's Fables.*

And so it is with some heating contractors. When sales slow up and jobs are hard to get, they are tempted to entrust their business success to the "jaws" of price competition.

They soon learn, however, that this usually results in loss, and that contractors who resort to these methods, like the fabled crane, are lucky if they escape with their business lives.

Wise heating contractors talk quality and reputation. They justify their bids by emphasizing, for example, such distinctive advantages as Weil-McLain Corrugated Heating Surfaces, Long Back-and-Forth Fire Travel and Scientific Combustion.

Because they are conforming with sound business policy, they usually get the better jobs and make a proper profit.

WEIL-McLAIN COMPANY

General Offices	Boiler Factory	Radiator Factory
Chicago, Illinois	Michigan City, Indiana	Erie, Pa.

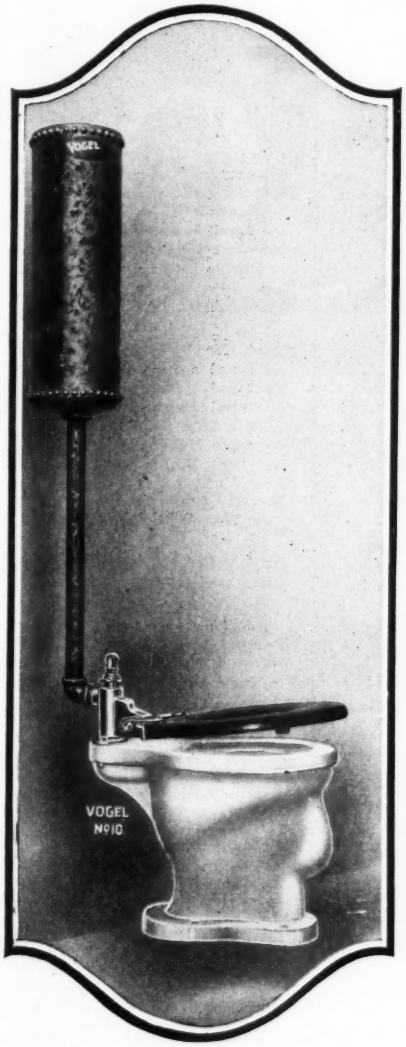
Fight Fuel Waste with

Weil-McLain

SCIENTIFIC COMBUSTION

BOILERS

"SEE THE WEIL-McLAIN JOBBER IN YOUR TERRITORY"



VOGEL *Number Ten Closet*

Early Harvests

It may be a little early for harvesting most crops but that doesn't apply at all to harvesting **VOGEL** Profits.

Of course even the farmer has to gather his crops and so you can't expect even to reap **VOGEL** Profits unless you cultivate **VOGEL** Prospects.

Now is the time to see those prospects about the **VOGEL** Number Ten Seat Action Closet. Get right to your harvesting and stay with it. The profits and sales will take care of themselves.

Jovo—

Our Catalog in Sweet's

Jos. A. Vogel Co.

Wilmington, Del. **St. Louis, Mo.**

VOGEL PATENTED

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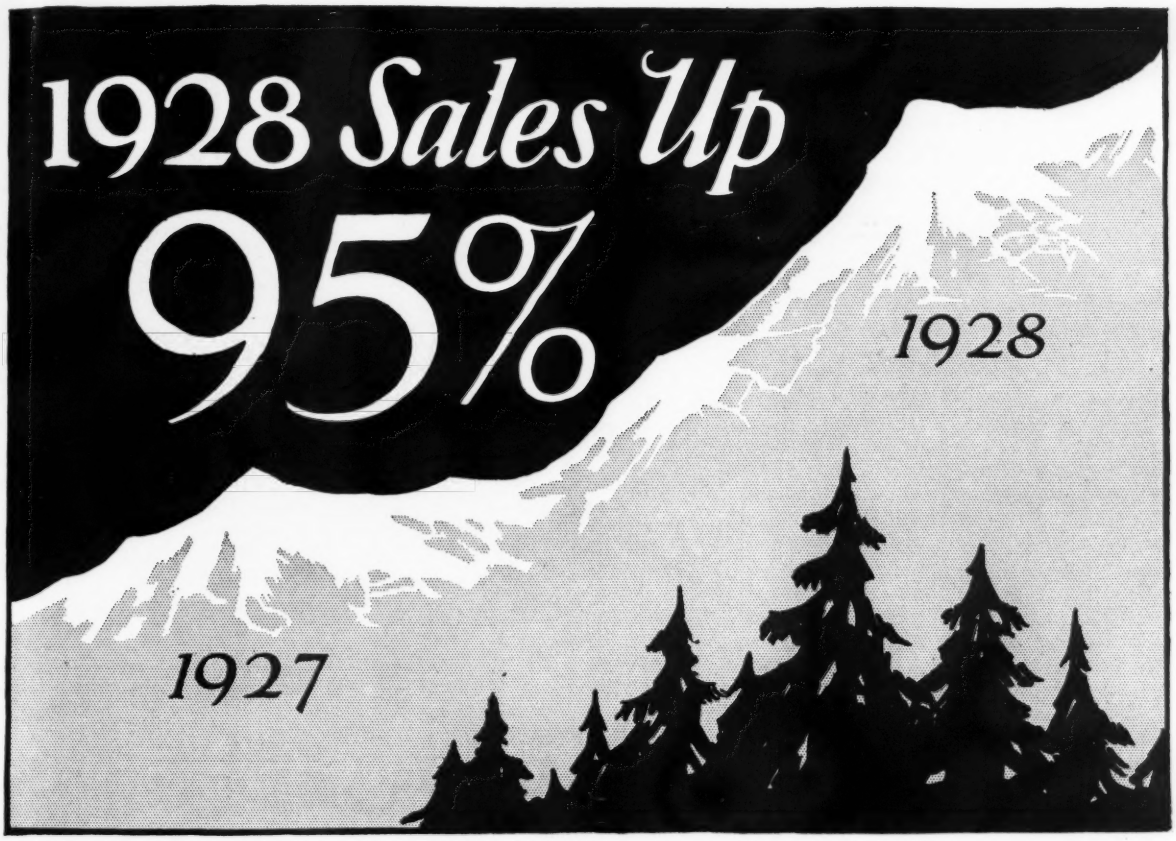


Heggie-Simplex Boilers Reach New High Peak of Popularity

Sales of Heggie-Simplex Steel Boilers continue to climb at an ever-increasing pace—sales for the first quarter of this year having exceeded last year's volume for the same period by 95%! This in spite of the fact that previous demand for these time-tested units had already made Heggie-Simplex one of the largest boiler manufacturers in the country. This year's remarkable sales increase is but further proof of the rapidly growing recognition which these scientifically built units have won as the most modern of heating boilers.

Heggie-Simplex Boiler Co., Joliet, Illinois. Representatives in principal cities — telephone and address listed under "Heggie-Simplex Boiler Company."

HEGGIE-SIMPLEX

ELECTRIC-WELDED STEEL HEATING BOILERS

When you buy a ratchet stock, *get these time-saving features:*

Buy a REED and you get— over and above the advantages of an ordinary ratchet stock— these unique "short cuts" to lower-cost threading—

NO BUSHINGS TO HUNT FOR. One adjustable guide centers the stock on the pipe instantly.

NO POWER-CONSUMING TROUBLESOME LEAD-SCREW. The REED doesn't need any. The REED'S unique dies, with double-threaded throats, take hold instantly— burr or no burr. You begin to cut the instant you pull the handle.

TAKES THE PLACE OF SEVERAL STOCKS. Having no lead-screw, the REED is not restricted to any one thread pitch. Cuts right or left-hand threads, on steel, iron or brass pipe, ½ to 2 inches; also bolts 1 to 2-in.

TELESCOPIC HANDLE makes hard threading work easy. It can be quickly adjusted to give the extra leverage you need for cutting hard 2-inch pipe.

Write us for full description of this simple, practical threading tool, that's built to stand the hardest usage.

REED MANUFACTURING CO., Erie, Pa.

REED *Vises, Stocks Dies, etc.*

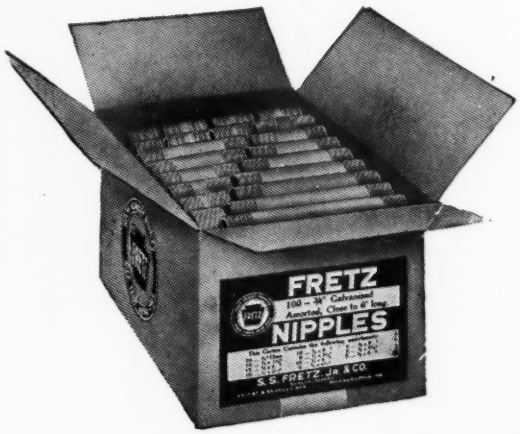
A real *double-service* ratchet stock

IN THE SHOP: Plumbers and steamfitters are saving time, and getting lower costs on their shop threading, by using this handier ratchet stock. Their men don't have to hunt around for bushings to make the REED stock fit different sizes of pipe—one adjustable guide centers it instantly on the pipe.

ON THE JOB: The REED is especially handy in the tight places. It cuts threads with a shorter movement of the handle, because the double reversing pawls give ratchet action on twice as many teeth.

And there are a lot more features of this faster and handier threading tool, points that you'll like. Write us for descriptive folder.

FRETZ NIPPLES



To buy advertised goods is to profit by the experience of the best informed.

S. S. FRETZ, JR. & CO.
PHILADELPHIA, PA.

THOS. DEVLIN MFG. CO.
Owned by S. S. Fretz, Jr. & Co.
23rd St. and Sedgley Ave. Philadelphia, Pa

DEVLIN MALLEABLE IRON FITTINGS

Do *your* customers want *salesmanship* or *Guaranteed Heating?*

Of course builders and home owners prefer engineering skill to a bright store front.

Economy in the long run means more to them than prices unfairly low.

It is satisfaction and not suave salesmanship that they are after; and the heating contractor who sells *Capitol Guaranteed Heating* assures a greater measure of these things. He deals in facts not excuses, and back of him is the written warranty of the United States Radiator Corporation to make good should any Capitol Boiler fail to properly heat its published amount of radiation.

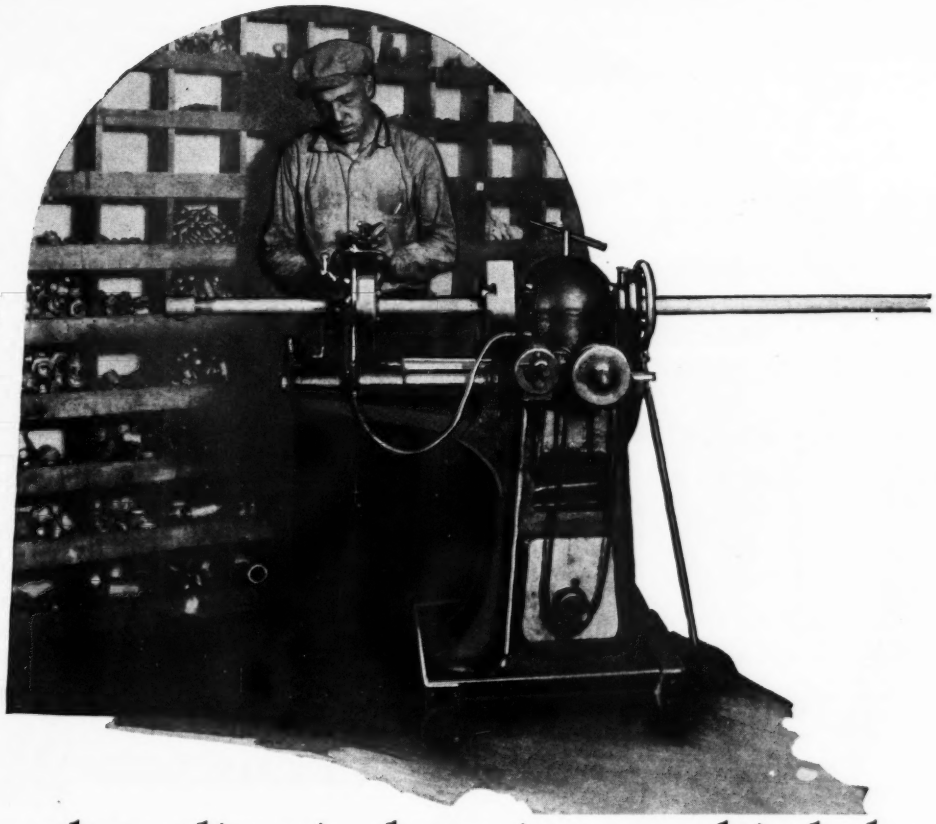
Capitol Guaranteed Heating, properly presented to prospects, has proved to be the greatest selling help in the industry. Are you taking full advantage of it?

United States Radiator Corporation - Detroit, Michigan

Guaranteed Heating WITH

Capitol Boilers

AND RADIATORS



Your threading is done in one-third the time

with this "speed champion"

Not just one or two reports, but *hundreds* of them, tell of the three-times-faster threading plumbers and steamfitters all over the country are doing with their WILLIAMS Portable ("Willie Williams").

For instance there's L. H. Knapp of Salona, Pa. He writes of his WILLIAMS Portable:

> "It beats any pipe threading method I ever tried. I can do more work with this machine than three men could possibly do without it. This Willie Williams has saved me hundreds of dollars and being portable, I can load it in 15 minutes myself, and unload it in the same time."

Yes, we can send you more reports like this one, from users near you— letters that give you a clear idea of *the extra profit you can make* by using this high-grade accurate threading tool.

Many plumbers have found that their WILLIAMS Portables easily pay for themselves *even when used only for threading bald-heads.*

Write for our new Booklet, "THE STORY OF EXTRA PROFITS," giving photos and reports of WILLIAMS machines which are making real money for plumbers and steamfitters.

Williams Tool Corporation
Erie, Pa.

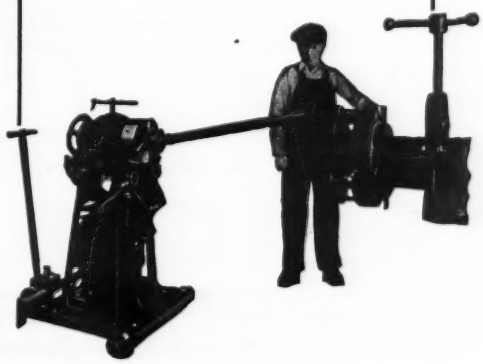
WILLIAMS PORTABLE
("WILLIE WILLIAMS")
PIPE, NIPPLE AND BOLT THREADER

You get a bigger value in the WILLIAMS Portable

Produced in large volume by an established, well-organized company, your WILLIAMS Portable is made from the same high quality materials used in our biggest machines— and at a much lower cost.

The WILLIAMS Portable is equipped with a 1-horsepower motor which gives ample power for threading pipe ¼ to 2 inches.

And with the Universal shaft hook-up the WILLIAMS Portable has the reserve power to thread any size up to 8 inches.



The Classic, most favored of all the combination sink fixtures, here appears for the first time in its beautiful new dress of Art Chrome.

Always handsome, convenient, proof against all the usual faucet troubles which annoy as they destroy, the Classic is too familiar throughout the industry to require extended praise.

But when you have seen this new Classic, in its new design and new finish, you will be amazed at the transformation. To the modern, colorful kitchen which is today the mode, the Art Chrome Classic makes a genuine contribution of simple, striking beauty.

Especially designed for the new low-back sinks—the soap dish lowered to come beneath the sill of the lowest casement window; the spout raised so that tall vessels may be filled without tilting.

Full descriptive literature for the entire Art Chrome line on request. Write—

THE CHICAGO FAUCET CO.

2700-22 No. Crawford Ave. Chicago

ART CHROME
CHICAGO FAUCETS
Life Long Service ~ Life Long Lustre

102 Sylphon PACKLESS EXPANSION JOINTS!

Specified by the Architects, and the Consulting Engineer for this 38-Story, 596-Foot, FURNITURE MART TOWER Chicago

What more convincing testimony could be given Sylphon efficiency and everlasting dependability than the installation of *102 Sylphon Packless Expansion Joints* on Steam Heating Risers *in the great tower of the largest building in the world*, by men who are acknowledged leaders in their professions?

Architects, George C. Nimmons & Co., Chicago

Consulting Engineer, A. C. King, Chicago

Heating Contractors, Gallagher & Speck, Chicago

Avoiding Use of Space Wasting Expansion Loops, and Packed or "Sliding Sleeve" Expansion Joints

THE almost universal selection of Sylphon Packless Expansion Joints for Steam Heating Risers, in notable buildings now under construction or contemplated throughout the nation, is based upon *demonstrated efficiency* in countless installations,—upon *fact not theory*,—upon *performance and not claims*.

In the light of modern engineering and construction methods it is manifestly unwise to cling to the antiquated joints "*packed with trouble*" and carrying repacking requirements. At best they are "Leak Loose" or "Jam Tight,"— and wholly unfit for a vacuum system or one where a slight vacuum is pulled.

The Sylphon Packless Expansion Joint, containing the seamless all-metal Sylphon Bellows is *steam-tight—yet free to move without jamming*. Installed on the vertical riser as simply and easily as any pipe fitting, *it becomes as permanent as any other part of the structure*.

Why then, risk damaging drains on pipe work? Why tap radiator branches? Why waste story height space for "Expansion loops"? Why worry over repacking jobs, almost impossible tasks, when the riser is concealed in furring?

These are the questions the leading architects, engineers and heating contractors are asking themselves today and they are NOT DOING IT. They are installing Sylphon Packless Expansion Joints.

The ORIGINAL and ONLY GENUINE SYLPHON BELLOWS

The motor element in all Sylphon Instruments is the most accurate, durable and flexible temperature control unit known to science.

We will be glad to send printed matter giving complete details of Sylphon Packless Expansion Joints, together with all information as to dimensions, prices and shipping weights. Just use the coupon attached for your convenience or write if you prefer. Your correspondence is invited.

THE FULTON SYLPHON CO., Knoxville, Tenn, U. S. A.

Originators and Patentees of the Sylphon Bellows **Dept. K**

Sales Offices: New York, Chicago, Philadelphia, Boston, Detroit, and all Principal Cities.

Gentlemen:

Please send details of Sylphon Packless Expansion Joints.

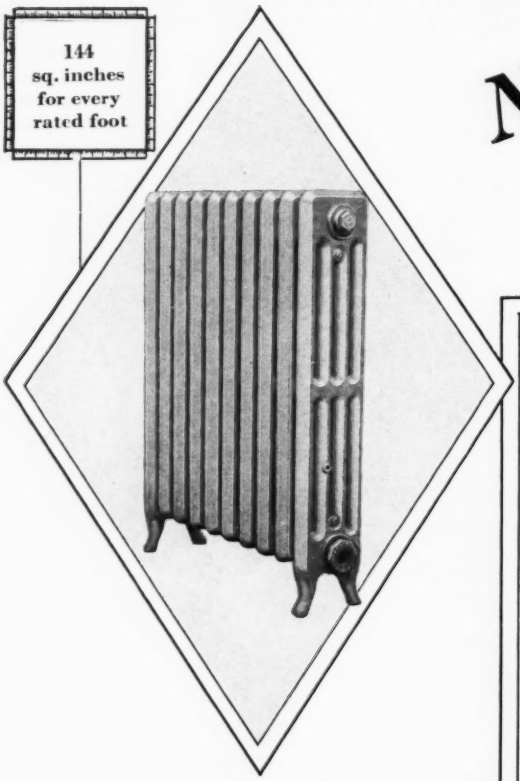
Name.....

Company.....

Address.....

City..... State.....

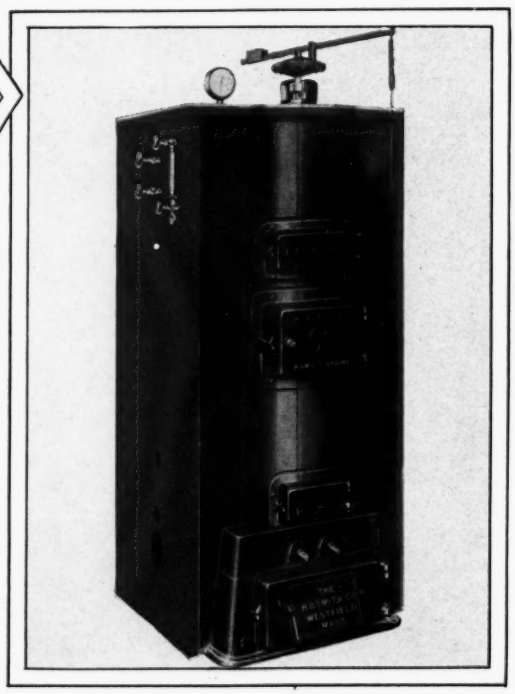
THE FULTON SYLPHON COMPANY — Sylphon — AUTOMATIC TEMPERATURE CONTROL



NEW!

The H. B. Boiler

Tailored in Mountain Ash Scarlet



"144"

The NEW

H. B. Smith Full Surface Radiator

In modern selling, beauty of design and color have taken a leading part. Even radiators and boilers, once considered for their utility and nothing else, have graduated into the colorful scheme of things-as-they-are.

Efficiency plus this NEW Beauty characterize these two new products. "144" is an attractive design to harmonize with modern ideas of interior decoration. And the H. B. Boiler handsomely tailored in Mountain Ash Scarlet to help make another room of the cellar.

The H. B. Smith "144" is a Full Surface radiator. Every foot of rated surface contains 144 square inches of radiator surface. More compact, more beautiful.

Write us for complete information. Also for information on our new gasket which saves you time and money on installations of our Boilers. The H. B. Smith Co., Dept. A-50, Westfield, Mass.

THE H·B·SMITH
BOILERS & RADIATORS
Used in fine homes and buildings since 1860

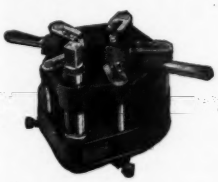
The H. B. Smith Boilers for steam, hot water and vapor heating; radiators; and hot water supply boilers; for every type and size of private home, office building, factory and public building.

Sales Offices and Warehouses:

New York: 10 E. 41st St. Boston: 640 Main St., Cambridge Philadelphia: 49th St. & Grays Ave.
Cleveland: 1108 Webster Ave. S. E. Westfield, Mass.

A Letter from Harry G. Nye

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.



Nye No. 2
(Toledo Type)

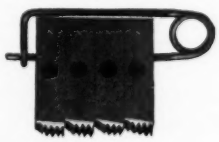
GEARED THREADING DEVICE
Improved

Capacity 2½ in. to 4 in., inclusive.
Net price complete.....$50.00
West of Rocky Mountains..... 55.00

FREE TRIAL—ABSOLUTELY GUARANTEED

Nye Solid Dies

The Nye patented feature of removing every alternate tooth in the back of the die to reduce friction is used in Nye Solid Dies. These dies are hardened and tempered in oil and made of finest tool steel.



Nye (Toledo Type) Chasers

Fit Nos. 1, 1-A and 2 NYE (Toledo Type) Die Stocks.

No. 1, 1 in. to 1½ in.....$ .75 per set net
No. 1, 2 in..... 1.25 per set net
No. 2, 2½ in. to 4 in..... 3.60 per set net

Nye Closet Spud Wrench

Net Price.....$0.50

July 21, 1928.

To the Plumbers and Steamfitters
of the U. S. A.

Friends:

I know a plumber whose wife thinks that college professors are just wonderful. (I sometimes wonder how they get that way myself.) She often says that, while a plumber is all right, in a way, and plumbing is a nice business, or sort of, she wishes her man had a little technical knowledge.

The other night she invited some folks in to supper, and, when she bagged a professor, she was as tickled as a man wearing his winter woolens in July. They hadn't any more than sat down before Old Highbrow said that any well-informed man ought to be able to discuss any subject intelligently.

Then the prof asked the plumber what he thought about mechanics. The plumber said if he meant automobile mechanics, he would rather take him out in the back yard and tell him there. He had just had his car overhauled and he didn't like to tell him right in front of the ladies.

The prof said no, what he meant was this: what did the plumber think of the change from cycloidal gears in which the faces of the teeth were epicycloids generated on the pitch circles and the flanks hypocycloids generated inside the pitch circles to involute gears in which the path of contact of the teeth is a straight line and the angle of obliquity is constant?

The plumber said yes, that he had always thought so, but it was plain that he didn't know whether the prof was talking mechanics or calling him names. But before the college chap could get his breath, our friend the plumber said he would like to ask the prof a few things. And then he began to spill elbows and unions and gaskets and drum traps and return bends and bushings and pipe-caps all over the place.

In one minute and eleven seconds the prof was hanging on the ropes, and two minutes by the watch he remembered that he had another engagement and faded away. As his coattails passed through the doorway, the plumber's wife fell into the plumber's arms and they lived happily ever afterward.

After all, there are more different things on a plumber's five-foot shelf than there ever was on any professor's. Every man to his trade, and ours, by the way, is making pipe tools. We have made a lifetime study of it, and that is why Nye tools work faster than a blonde in a cabaret, last longer than the payments on the car, and are easier to operate than a canoe.

Yours in plain language.

Harry G. Nye

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All rights reserved.

OTHERWISE KNOWN AS

THE NYE TOOL & MACHINE WORKS

MANUFACTURERS OF HIGH GRADE PIPE TOOLS

4120-30 Fullerton Avenue Chicago, Illinois

Immediate Shipment!

Steel Pipe Service designed especially to meet today's *changed buying habits* - - -

THE days when jobbers and consumers of pipe and other steel products carried large stocks and made seasonal purchases are swiftly passing. This is an era of hand-to-mouth buying.

Of course when steel pipe is ordered about as needed requirements cannot always be anticipated and, as a result, rush shipments are often necessary. The new pipe mills of Bethlehem Steel Company are organized and equipped especially to meet this condition. The facilities for storing pipe are exceptional, and a large, well-assorted stock is kept on hand at all times. An order for any but a most unusual quantity or size can be filled from stock, and shipment made immediately.

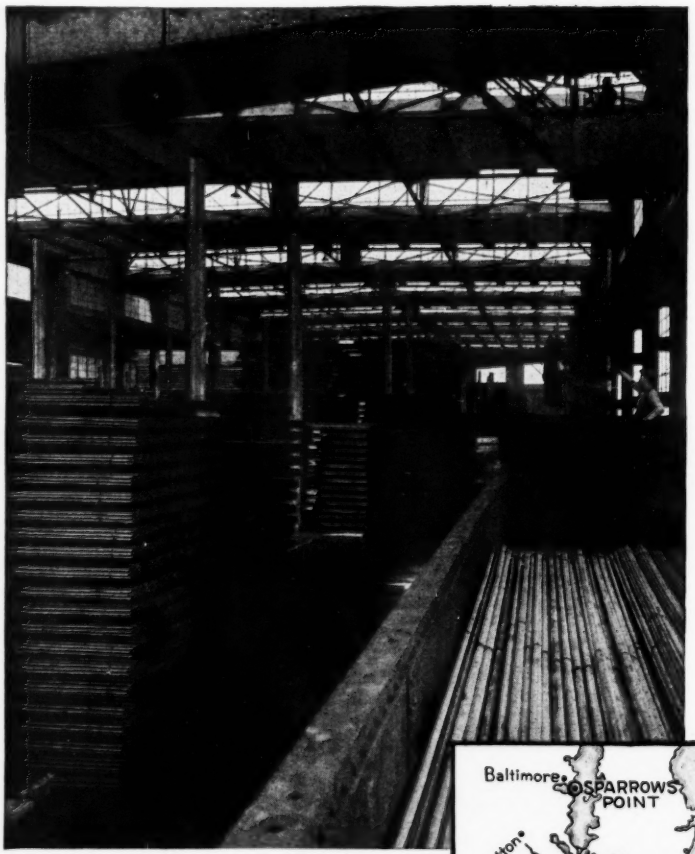
Whenever a rush shipment of Bethlehem Steel Pipe is required, a wire or phone message from your jobber to the nearest Bethlehem District Office will cause the pipe to be on its way within a few hours.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Detroit, Cincinnati, Chicago, St. Louis, San Francisco, Los Angeles, Seattle, Portland and Honolulu.

Bethlehem Steel Export Corporation, New York
Sole Exporter of our Commercial Products



The name "Bethlehem" appears at intervals on every length of Bethlehem Steel Pipe.

The new Bethlehem Pipe Mills are situated at Maryland Plant, Sparrows Point, Maryland, near Baltimore. Three trunk-line railroads enter Maryland Plant; consequently, prompt inland shipment can be made. And the location of Maryland Plant on tide-water permits prompt shipment by steamer to points on the Atlantic Seaboard and on the Gulf and Pacific Coasts. The steel pipe can be loaded directly into the vessel at the Plant.

BETHLEHEM STEEL PIPE

"Domestic Engineering" market reports are carefully written after personal calls on sources of materials.

Between Ourselves

"It isn't volume that matters — it's the profit."— Edward E. Schiel, master plumber of Nashville, Tenn.

Children's books often tell stories of the giant, or some such mythical figure, who turns on faucets and makes it rain, snow or sleet, and then turns on the sunshine, etc. Of course, we learn later to discount such stories, but as civilization progresses, we find other things which almost have the same effect. On the front cover this week is a picture of a control board of a central heating plant, showing how the warmth in buildings all over a city can be controlled by a mechanical giant.

Your Editor

CENTRAL heating is taking an important place in the scheme of things these days. Many municipally owned central heating plants keep the downtown sections warm during the winter months, and many privately owned companies are scattered throughout the country. Plants in a number of cities also heat residential sections, and the up-to-date heating contractor is watching this trend, and its result on his business. Installing a heating system in a house supplied from a central plant is a trifle different from one supplied from a boiler in the building, and heating contractors should study the problems of such installations. In this issue is an article on "District Heating." It will be interesting to heating contractors in cities where there are central heating plants.

"ME AND HANK" are back on the job this week, telling all about their famous selling campaign. You may remember their last story when Jerry went out to show Hank how to sell, and washed a few dishes on the side. Jerry claims that on account of the fact that Hank had an extra day in which to plan his campaign that it was an unfair advantage. Even so, it was a tie race, and they all took a trip in an airplane to celebrate. The important thing about the contest was that both proved to one another that plumbing and heating jobs could be sold. These plumbing and heating contractors have become famous throughout the industry on account of their "Dolan & Olson" stories, each an actual experience. This week they provide another amusement period for the readers.

THE success of the Schoolmaster articles has always been the interest they have aroused in the trade, and the number of master plumbers who have contributed solutions to the problems. The articles have covered a great many phases of plumbing, and are always interesting to those who follow them. Aside from the information they contain, the articles keep one in practice, and for that reason are valuable to the well informed contractor. Another Schoolmaster problem is in this issue.

"YOUR magazine is as necessary to us as oil to a motor."—So writes F. D. Wellcome & Son, plumbing and heating contractors of Waltham, Mass.

THE alertness of the plumbing and heating contractor of today is seen frequently in the office of a business paper, and one of the evidences of this fact is the amount of advertising retailers in the field are doing. As an example, the first 50 men who bought advertising mats on a ten-insertion advertising campaign appearing in our merchandising section, have an average circulation in their local papers of 10,000, and will appeal to 5,000,000 prospects in a period of not over twenty weeks. The retailer in the field is doing his share of the advertising.

THE variety of interests which are included in the master plumber and heating contractor's scope of activities indicates the extent to which the industry is growing in diversity of work. The variety of articles in "Your Weekly" shows what the contractor finds most interesting. In this issue are articles on many subjects, and include, "Sanitation in Canada's Gold Mines," "Condensing Tanks," "Skimping the Cooling System," "Pilot Drawing for a Group of Towns," and a number of others.

PLUMBING and heating contractors have always been accused of being merely technical men who know installation methods, but whose salesmanship is below par. We have every reason to believe that this is untrue, especially as evidenced by the amount of material constantly available for our merchandising sections, one of which will appear in next week's issue. It shows pretty well how the plumbing and heating contractor has gotten the sales viewpoint, and how he is carrying it out.

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

"I'LL TAKE A 'TOLEDO' EVERY TIME"

Experienced pipe tool operators, those who know the value of good tools, will pick a genuine "TOLEDO" every time. The predominance of "TOLEDO" tools in plumbing and heating shops throughout the country is convincing evidence of their superiority.

The "TOLEDO" No. 1A ratchet threading device, shown in the illustration is light, compact, durable, good for years of service, and time proven the most efficient and satisfactory 1-in. to 2-in. pipe threader.

It is standard equipment in most shops. Net price is but - - - - - - **$12.00** (West of Rockies $12.75) F. O. B. Toledo or your jobber's stock. For real satisfaction specify a genuine "TOLEDO" No. 1A the next time you need a 1 in. to 2-in. threader.

YOU CAN DEPEND ON A "TOLEDO" AND KNOW THAT A "TOLEDO" WILL SATISFY YOU

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO.

TOLEDO, OHIO **New York Office: 72 Lafayette St.**

DOMESTIC ENGINEERING

Vol. 124, No. 3
Whole No. 1858

The Plumbing and Heating Weekly

Chicago, Illinois
July 21, 1928

OBSERVATIONS

Distribution Losses and Why

Quoting Dr. Julius Klein, director of foreign and domestic commerce, department of commerce, Washington, in an article that recently appeared in "Chicago Commerce," "I estimate the nation's losses from inefficient distribution to approximate $8,000,000,000 annually. The details of this truly appalling charge on our national resources and earning power could be elaborated almost indefinitely. To take a single item at random the careless administration of credits through over-extensions, slipshod installment selling and the like piles up an annual loss which has been reliably estimated at not less than a billion dollars a year. There is no way of checking accurately, in dollars and cents, the losses involved through inadequate sales operations—overselling poor markets and ignoring good ones, nor is it possible to appraise or even to guess with reasonable accuracy the losses involved in scores of other phases of our distributive processes."

Billions of Dollars

Dr. Klein is one of the nation's foremost experts in distribution matters. We quote what he says, for it can be taken and applied by the plumbing and heating industry as well as by any other industry. Plumbing and heating share in this eight billion dollar loss, and the few reasons he gives for this loss are reasons for much that is wrong with plumbing and heating.

Over-extension of credit is one of the worst menaces to plumbing and heating profits existing today. It allows incompetents to enter the business and enables them to remain in it. It penalizes the worth while master plumber and heating contractor when the wholesaler over-extends credit to incompetents. And when statisticians reliably estimate that all business loses more than a billion dollars a year because of this over-extension, those who do it in the plumbing and heating business may see how they are penalizing themselves.

As for the losses involved through inadequate sales operations, manufacturers and wholesalers in the plumbing and heating industry are incurring such losses when they fail to consider, in their selling plans, the fact that only 35 per cent of the master plumbers and heating contractors do enough business and pay their bills to warrant an attempt to sell them, the balance either doing very little business or going out completely each year.

As Dr. Klein says, many agencies, such as the business papers, are calling these facts to the attention of the manufacturer, wholesaler and retailer, but their best efforts are utterly fruitless unless they are actually applied by manufacturers and merchants to their individual sales problems. We have such facts, and we consider it one of our functions as a business paper to present them. We have presented them in these columns from time to time. We urge their application.

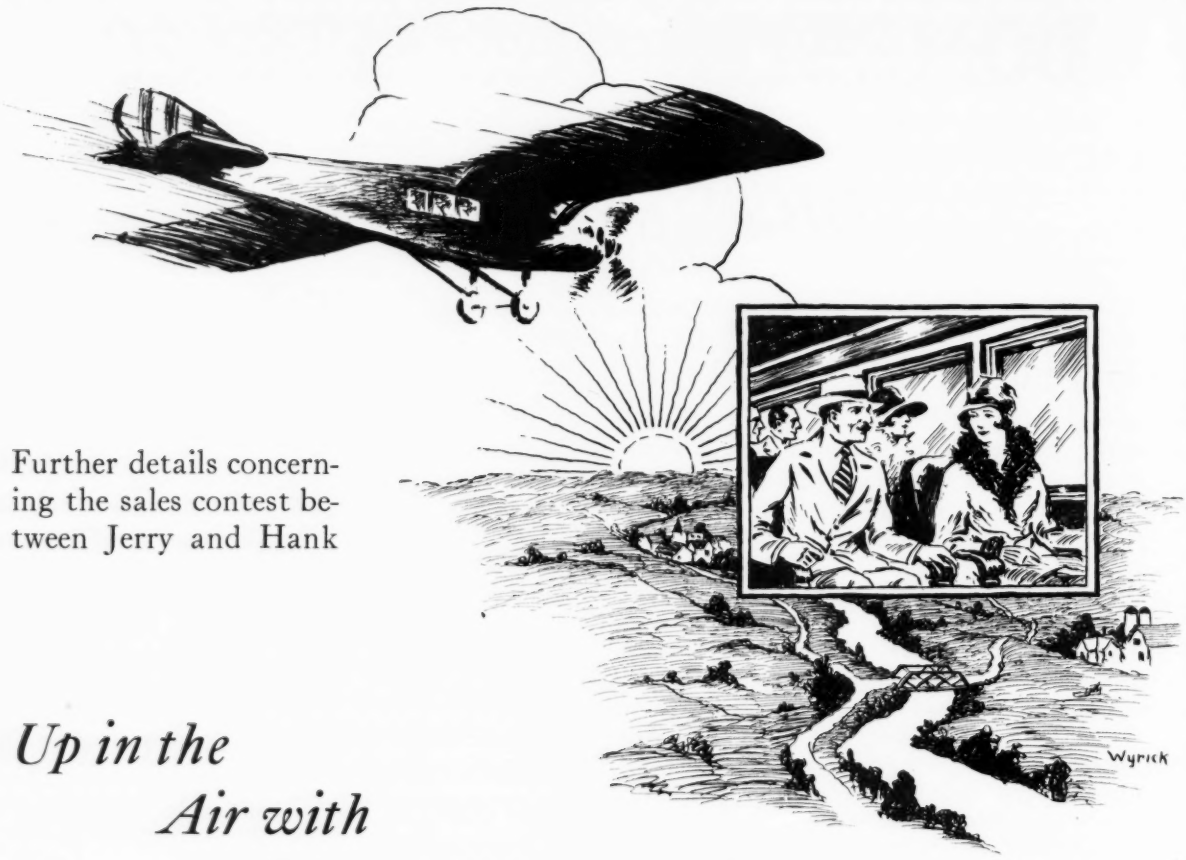
Apply the Facts

READY AND WILLING

The master plumber and heating contractor doing a sufficient amount of business to justify his calling himself a master plumber and heating contractor is quick to grasp every new, worth while merchandising, or business building, idea. The fact that he does a good volume of business is proof of this, for in these days of competition a good volume of business is not done without employing ideas and initiative. Those who know and study the good type of retail outlet in this field find every indication of such altertness to worth while business building plans. We find it in the demand for and interest in our business helps. The Plumbing and Heating Industries Bureau finds it, a recent letter from the Bureau stating that more than one thousand retailers asked, during the month of June, for the mat of the tie-up advertisement to be run in newspapers, that retailers have asked for more than twelve thousand copies of the tie-up sales letter and that the number of green health examination stickers sent out has exceeded a million and a half. There are those in this industry, and without it, who criticise the progressiveness of the master plumber and heating contractor. But those who cater to the worth while outlets find him ready to tie up with and lead the way in all worth while plans.

Study to Progress

We have mentioned in these columns before a statement by a well known economist wondering why it is that business men seem to feel that little study is required to run a business enterprise. He pointed out that doctors, lawyers and engineers study from the time they enter school until they die, because study is necessary to their keeping up with the progress of their respective professions. Business men should study just as much.



Further details concerning the sales contest between Jerry and Hank

Up in the Air with

Dolan & Olson

ME AND HANK been up in the air. 'Course we've been up in the air a good many times since we left Old Man Flannigan's Shop, and a pay check every Saturday night, but this was a different kind of a journey.

You see, Me and Hank had a little bet on—but perhaps I'd better start in the beginning and work around to this stunt of being up in the air. I went out and called on twelve good ones and landed some real business and Hank and another peddler went out on the same kind of a cruise, and how.

I'm thinking that Hank stacked the cards on me. 'Course, he had an extra day to plan his campaign, because I went out on Monday and he started on Tuesday, but that Monday must have been a busy day for Hank and his peddler pal.

Hank started out Tuesday morning with a list of ten prospects, a cute little demonstrator to show how good air valves work, a couple of boxes of wood wheel air valves for hot water radiators, and a sheet prepared for each of his prospects.

On this sheet he had listed the owner's name and address and kind of building; then headings and blank spaces so that he could fill in a complete description of the plant.

HANK GOES TO WORK

IN TELLING us about it, he said that he went to the first place on his list and found the man of the house at home, so Hank told him that he was making a bit of a survey of the heating plants owned by people that he considered customers and friends, and asked the privilege of examining the boiler.

It took longer to do than the telling of it does now, because he and Hank had to talk over everything under the sun from baseball to politics before they got down to heating boilers and heating equipment.

Then Hank started up the little demonstrator, and when he left he had an order for fifty-six valves, and added to that the work of going over all of the feed valves and either repacking them or replacing if necessary. Not a bad start at all, and Hank considered the day well spent.

His next call brought him to a house where he had installed the two boilers a good many years before, a two-family house, owner in the first floor, tenant in the second floor, separate heating plants for each floor.

And again Hank was in clover up to his knees, because the tenants were thinking of moving into a heated apartment so as to get away from the bother of tending a fire, and the owner was in despair because he had good tenants, and good tenants are hard to find and harder still to keep. He appealed to Hank for advice, and Hank was right there with a great big spoon.

A REMODELING JOB

TOLD this chap that the real thing to do was to cross-connect the two boilers; install an oil burner in one of them and use the other one for emergencies and for burning garbage. Showed him just how it could be done and how easy it would be to take the welding outfit and

burn off the risers at the boiler and then replace them with larger risers from the boiler tappings to the cross tees.

'Course this chap couldn't see how one boiler could heat the whole house when it had always taken two of them to do it, but Hank showed him that coal-fired boilers only receive attention three or four times each day and that from bed time to morning the fire has no attention whatsoever, whereas the oil burner is on the job every minute of every hour and does not let the water in the plant cool down very much until it throws a few heat units into it and brings it back to its proper temperature.

Well, Hank sold the idea and it resulted in a nice bit of a job for us and the commission on an oil burner. Not half bad, I'll say.

The next prospect had an old time expansion tank in the bath room and Hank just happened to drop in at a time when they were papering and painting and the lady of the house wanted to know if there wasn't something that could be done to get rid of that horrid looking tank in the bath room. So they went up to look at it. The painter was just starting to give it a priming coat and had found one or two drops of water close to the bottom connection, so Hank investigated and found that the bottom had started to rust and was just about to break loose.

He sold them a tank in the basement outfit that will not only remove an eye sore from the bath room, but will improve that heating plant about one hundred per cent.

And right next door to that place he found that some one had replaced the old open tank system with a pressure system, but had left the old altitude gauge on the boiler and the owner wondered why it was there and what it was for and finally told Hank to put on the right kind of a "clock" and to patch up the covering on the boiler. Not a big job, but one of the kind that is mighty handy for fill-ins between the other jobs.

OLD-FASHIONED WORK

THEN he ran across a lady who wanted to improve the looks of her first floor living rooms. Seems that some one had installed an open tank, large pipe hot water heating job with the risers to the second floor exposed in the first floor (some people call it "open plumbing") and she had gotten sick and tired of looking at those risers and cleaning in and around them year after year, so she invited Hank in, told him all about it, and he cast his eagle eye on the problem, doped it all out, told her what could be done and wound up by getting the job of concealing the risers, putting in a couple of low radiators in place of a couple of high ones, cutting off some old gas lines, patching the plastering, doing the necessary carpenter work, and changing the electric wiring.

Sometimes I think that Hank should have been a general contractor.

It couldn't be all sunshine and Hank found that out, because he struck one place where the heating plants were in apple pie order, but the owner was not satisfied with the various and sundry faucets in his duplex. When it comes to faucets, Hank has some ideas of his own on the subject and "standardization" is the key note; so he talked that one subject and got orders to yank out every faucet in the place and instal faucets of just one pattern from the basement to the attic.

It's a mighty sweet order and the horrible examples that we brought in from that job may bring some orders for standardized equipment.

Landed a little job of cleaning at the next port of call and then struck a house where he had installed the boiler almost twenty-five years back. Last winter it had sprung a leak and Hank dropped in just at the opportune time to land an order for a new boiler, the owner frankly stating that, having had one "Hank installed" boiler (although Hank was only a helper at the time) which had served for a quarter of a century, he felt safe in getting another "Hank installation" as he felt that it would stay with him to the end of the chapter.

And Hank found a chap who had a hot water plant with a choice assortment of air valves. It took two keys and a screw driver to open them, so Hank sold him some wood wheel air valves, and when he left the house after making the change the chap was still going around from radiator to radiator opening and closing the valves just because they worked so nice.

To cap the climax, Hank got an order for an automatic

The sales teams get together and compare results

gas water heater at the last stop on his list and the plumbing department won't get credit for that sale, because this fellow is having Hank connect it to the feed and return mains leading to the living room and dining room of his home, so that he can have heat in a couple of rooms during the spring and fall without having to start a fire in the boiler itself.

It sure will be a convenience.

UP IN THE AIR

WHICH brings us to Saturday noon. We got together, the two salesmen, Hank and myself, and figured out the net results of the campaign only to find that it was almost an even break. The totals were about equal and the profits would run about the same, so there was only one thing to do, and the salesmen said that they would do that. They would split the material orders fifty - fifty and would divide the cost of the party to be held the next day. Told Me and Hank to be ready at 9 a. m., me with the Queen of the Bungalow and Hank with the girl that will be Mrs. Olson any time that she decides to quit her present job.

"Open plumbing" is one of Jerry's opportunities

And at 9 a. m. the next morning, they picked us up and we started going places. First stop was at the flying field. We piled out of the car and these two selling birds hiked us across the pasture and smack into the prettiest ship that ever sailed over a cloud.

Introduced us to the pilot. Told us to climb in. 'Course the girls were not very keen on it, and I don't know how Hank felt, but I sure felt that this was one time when losing would have been better than winning, but it was a case of follow the leader, and that blonde pirate of Hank's will do anything once. She started the parade by getting in first and cooing that it was just too lovely for words. It may have been too lovely for words, but that wasn't why I was keeping still. I was out of words, but my knees were doing better than any telegraph operator that you ever saw.

However, we all climbed in, got seated and squared away. Smiled at each other in that funny sort of a way. Then somebody on the outside locked the door. Three or four other strong men began winding up the old coffee mill. She got going with a roar. The pilot says, "Let's go!" And, boys, we went.

Bumped over the ground for a few blocks, then started to rise, topped the trees and buildings, kept right on climbing up and up until the rivers looked like ribbons and the lakes like cups of water set on a green and black table cloth.

And just about then we began to enjoy it. Found that my tongue was still with me and asked that pilot plenty of questions and he pointed out first one town and then another.

After two hours in the blue, he brought us down to earth and we put in the day in the usual way, eating and sight-seeing, and in the early evening we climbed into the plane again and sailed back for home.

It was some trip and Me and Hank are sure thankful that we made this successful venture in selling. The sample has been so good that we are going right out after some more of it. And we aren't going to waste any time doing it.

Sanitation in Canada's Gold Mines

By WILLIAM C. MILLAR

TEN years ago, statistics gathered by the newly appointed sanitary inspector for the province of Ontario, Alex White, showed that in that year over one thousand cases of smallpox, diphtheria, typhoid fever, pneumonia and other respiratory diseases had developed in the lumber camps, sawmills and gold mining camps which were scattered all over the newly-opened northern part of that province, with a considerable percentage of deaths. In the summer operations in sawmills, railroad construction work and gold mines, typhoid fever had taken the biggest toll.

Last year's statistics showed that all cases of the above diseases that had developed could be counted upon the fingers of two hands, with no deaths. In the nine years' interval between the taking of those statistics, Mr. White had built up an organization of trained sanitary inspectors, stationed at strategic points to enforce regulations which he had drawn up, and which the Canadian government had incorporated into their statutes.

Mr. White is at present reckoned to be one of the foremost exponents of disease prevention in Canada, the result of following out of certain sanitary rules. His early training in the plumbing and domestic engineering business fitted him for the position, which the above results show he has ably filled.

The disease preventative measures carried out at the opening of the newly-discovered gold area in Northwestern Ontario last year are along the lines that have given

the important and far-reaching results that have just been mentioned.

THE START OF THE BOOM MINING TOWN

A HUDSON'S BAY trapper, making the round of his trap-lines, had sheltered beside an up-turned tree-root, and, while eating his frugal meal, saw the sun's rays glittering on some rock adhering to the fallen root. A casual inspection by the trapper, who had had some mining experience, sufficiently aroused his curiosity to make him collect a few samples, which he brought out to civilization the following spring. From then on, small parties were seen every week leaving the different railroad stations in the north for an unknown destination. Before the snow flew that fall, the whole world knew of the wonderful gold discoveries in the Red Lake District of Northwestern Ontario. The little railroad town of Hudson, with its little two-by-four station, Hudson's Bay post and two houses, was the nearest point of the railroad which crosses the north country, and to this point, miners from every part of the world deployed, Duluth, Minn., having the honor of sending in the first woman prospector.

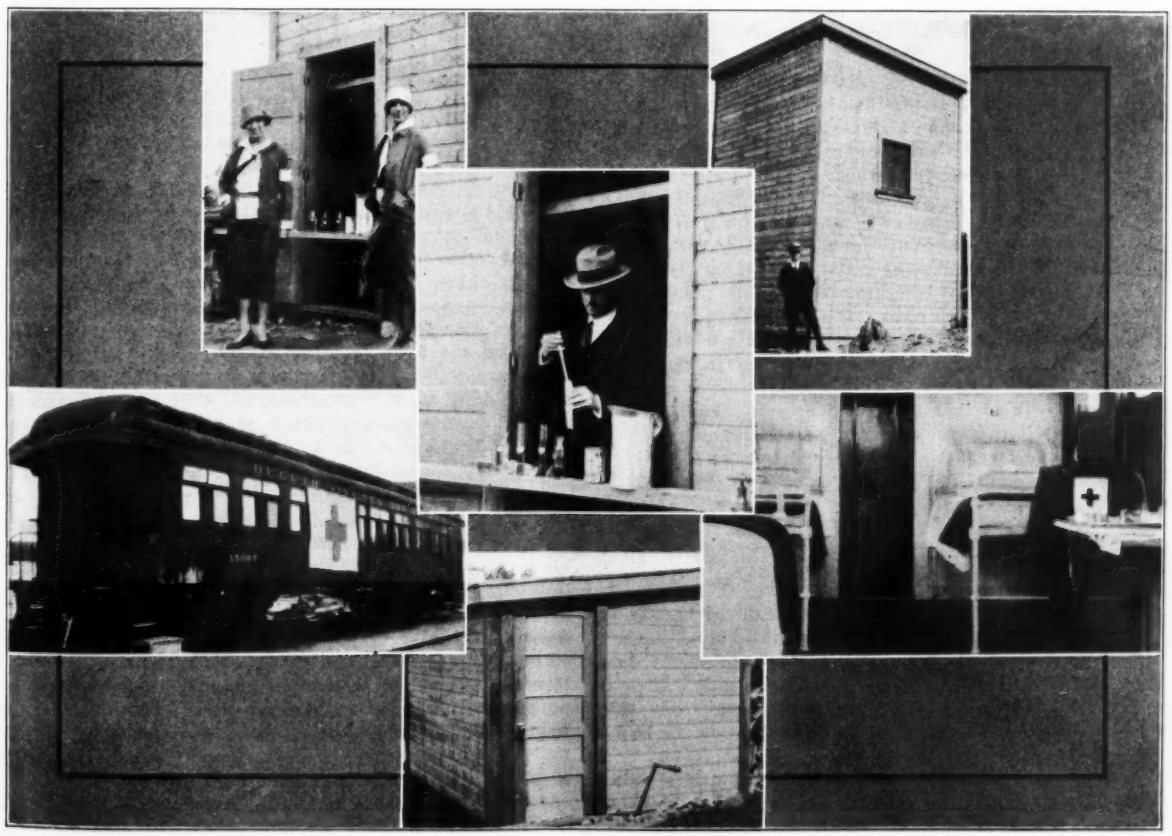
Hudson, from a railroad station and two houses, developed into a boom town, with three banks, four hotels, police barracks, dozens of frame shacks and tents. Horses and huskies in hundreds were tied up on the ice of Lost Lake, on the shores of which Hudson stands. Everyone suited his own convenience in regard to sanitation, and Lost Lake, through the ice of which everyone secured his water supply, would, with the coming of the spring thaw, act in the dual capacity of public sewer and drinking water supply.

The Ontario department of health, through its minister of health, the Hon. Forbes Godfrey, foresaw the danger pending if something were not immediately done. A sanitary inspector was at once appointed to enforce regulations governing the disposal of all human wastes. The erection of tents and houses near the lake shore was forbidden, and plans were at once made to secure a pure and adequate water supply. The lake being the only nearby source, a 2-inch main was run out three hundred yards from the pump-house on shore, where a five-horse-power motor had been installed, a booster pump forcing the water up to a tank-house on the hill, in which had been installed a one-thousand-gallon stave tank. Supply by gravity was run from this tank to convenient points in the new boom town. A chlorination system, governed by the simple but efficient ortho-tolidin test, to ascertain the necessary amount of chlorine required to destroy all dangerous bacteria in the water, was inaugurated—then this little mushroom town had all the advantages of a modern town in so far as its water supply was concerned.

One year has passed since the big stampede, and not one case of disease has yet been reported, so another proof has been given of what sanitary science can do.

The Canadian Red Cross Society, that organization which did such wonderful work in the Great War, also took great interest in the opening up of the Red Lake gold fields, and had two of their most efficient nurses establish a hospital in this little frontier town. Many a tired and sick prospector will long remember the care and kindness extended to him by these nursing sisters.

Are the mines to prove a success? Five corporations that own the mines at present operating in Nipissing, Ontario, the corporations that took out twenty-eight million dollars' worth of gold last year, have all placed machinery on their claims in this new territory and have dozens of prospector-scouts out. When one sees five trained pointers making a stand at the edge of a clearing, he expects to see something flushed.



Another method of finding the

Contents

of a partly filled

Horizontal Tank

IN THE ISSUE of Dec. 17, 1927, on page 31, an article appeared which was in answer to an inquiry asking for a method for finding the number of gallons contained in a horizontal cylindrical tank only partially filled.

The problem was based on the method of finding the area of a segment of a circle. This is a very interesting and practical problem, and has since attracted considerable attention. Our answer involved the use of a table of segment areas.

Now comes one of our friends with a method for solving this problem without the use of a table. This is Harry T. Clayton, instructor in plumbing in the South Philadelphia Evening High School.

After stating the problem, he says: "I would solve the problem in a way that would eliminate dependence upon any tabulation. My rule is as follows: Divide the diameter by the height of the segment; subtract .608 from the quotient; extract the square root of the remainder; multiply this result by 4 times the square of the height of the segment; divide this product by 3, and the quotient will be approximately the area of the segment; multiply the area of the segment by 120 (length of tank in inches) and divide this product by 231 (the number of cubic inches in a gallon), and the result will be the number of gallons contained in the partly filled tank.

THE SAME FORMULA FROM LOS ANGELES

SOME time after receiving the above, another letter was received from Joseph M. Canavan, Los Angeles, Calif., submitting exactly the same formula as Mr. Clayton has given us, which seems quite remarkable.

This second letter is as follows: "I had occasion some time ago to find the number of gallons of water a horizontal tank contained. This tank was about two-thirds full. I found the number of gallons this tank contained, but had no means of checking the result I obtained, or I might say, I had no means of measuring the contents.

"I have checked my problem by the 'Domestic Engineering' method, and find that my method gives the same result.

"I am very glad that this problem was submitted and answered, as it is an exceedingly interesting one.

"My method of expressing the formula is as follows:

$$\frac{\sqrt{\left(\frac{X}{Y} - .608\right) \times \frac{4Y^2}{3} \times \text{Length}}}{231} = \text{No. gals. in partly filled horizontal round tank.}$$

"I would like to know whether this is the right way to express the formula."

The above is based on the sketch shown in Fig. 1, and is a correct and clear statement.

We have compared the results obtained from this formula and the one which we gave in the Dec. 17 issue, and find them exactly the same.

There is no doubt of the educational and practical value of problems such as this, and we contemplate submitting other problems of this character from time to time. That being the case, it would be a fine thing if our readers would submit problems which they have come upon in the course of their practice. These are always far more interesting than a made-up problem.

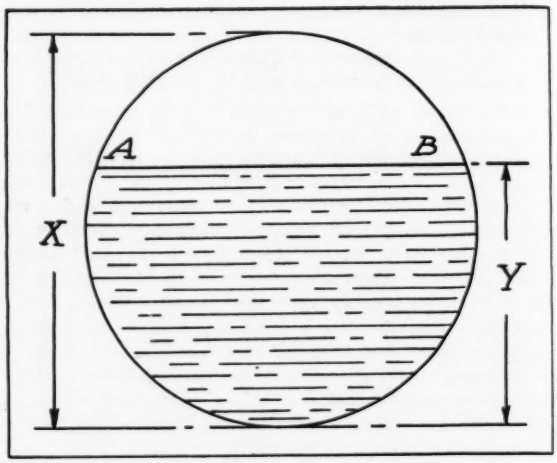


Fig. 1

At the close of his letter, Mr. Clayton asks the following: "Some time ago in 'Domestic Engineering' the following question and answer appeared: 'Should there be pressure in a plumbing system? Answer, No.'

"I contend this is wrong. If there were no pressure in a plumbing system, what would prevent siphonic action on the traps? There has been quite a great deal of controversy on this question and answer, between myself and other instructors. It is a direct question, and to my mind is an important one."

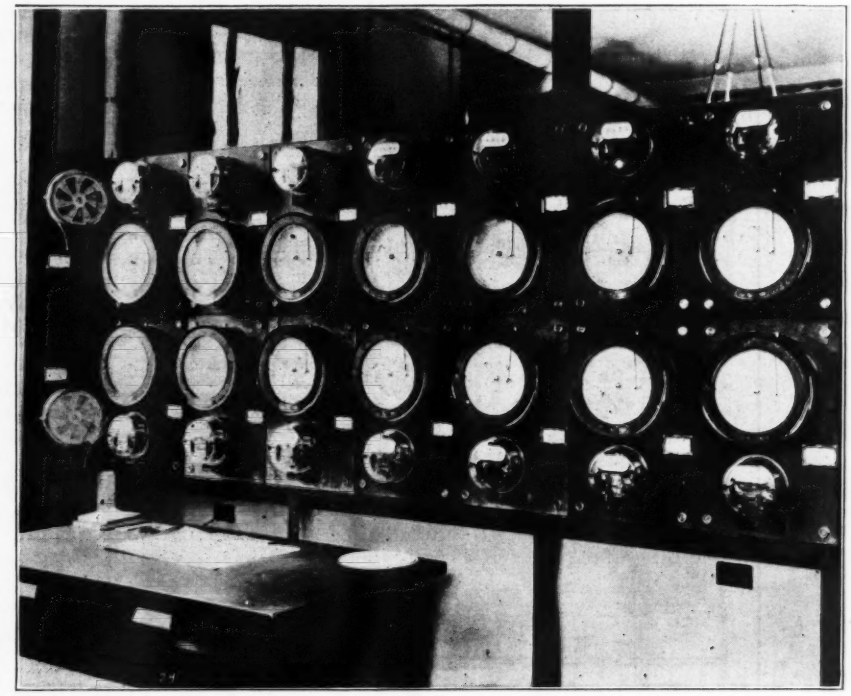
We haven't any doubt that the answer which held that there should be no pressure in the plumbing system, would, if it had gone into further and more detailed explanation, have shown that a fundamental principle underlying the operation of the plumbing system calls for the maintaining of atmospheric pressure throughout the plumbing system. That is what the vent system is for.

The instant that this pressure of the atmosphere is entirely overcome or greatly reduced in the plumbing system, there is immediate danger of the partial or complete siphonage of trap seals that happen to be within reach of this influence. Atmospheric pressure is always active on the house side of trap seals, and the instant there is not the same pressure counteracting it on the sewer side of those seals, there is danger of siphonage.

The presence of atmospheric pressure is so common a thing and so indispensable that we are inclined not to take it into consideration as being a real pressure.

Steam to Remove Snow From Roads

Steam, which has been used to assist in almost every kind of a project under the sun, is now about to be used in melting snow from highways and so make them usable in winter time. Certain roads in Nevada are so filled with snow each winter that it is impossible to travel on them with wheel vehicles. The Chamber of Commerce of Reno, Nevada, has under consideration now the laying of steam pipe lines a few inches beneath the surfaces of certain roads. The steam will be supplied by boilers four or five miles apart. According to competent engineers, steam so provided would warm the roads to such an extent that the snow would be melted as soon as it falls.



The switchboard in the office of a district heating plant

District Heating

THE PAPERS and reports for 1927 of standing committees of The National District Heating Association indicate that district heating systems are expanding. Of the members of the association, 38 submitted statistics on their heating systems for the year 1926. This report shows that these 38 systems have over 12,000 customers and more than 14,400 condensate and flow meters. One system has only 2 customers while another has 2,039. The total boiler installations of district heating systems that reported, range from 600 rated horsepower to 75,000 rated horsepower. The boiler pressures vary from 25 lb. to 350 lb. The high pressure line pressures of the distribution net are from 4 lb. to 150 lb. inclusive and the low pressure line pressures from 1 lb. to 75 lb. The heating season varies from 191 to 365 days.

The majority of the 200 or more district heating systems operating in the United States furnish live steam, others supply exhaust steam or feed some exhaust from turbo-generator plants, and about 50 systems provide hot water heat. The hot water heating systems are confined practically to the low-building residential sections. Several plants are under municipal control while the majority are operated as branches of the power generating companies. Several systems purchase their steam in part or entirely. Others maintain combined power and heating steam generation.

From 1924 to 1925 inclusive, 12 large companies had an average increase in pipe line mileage of 7.6 per cent, 8 medium sized companies of 6.2 per cent and 6 small companies of 3.6 per cent.

District heating plants furnish today steam for practically every kind of service including the heating of rooms and of water, cooking, laundering, hydraulic elevator operation, refrigeration, processing, restaurant service, low power steam-driven machinery, sterilizing, dairying, in fact for every kind of factory, warehouse, hotel, office, store, theater, church, school, public building or residential structure where lower pressure steam is needed. The expansion of the district heating business is not limited by the services it can render.

The first district heating plant was put into operation at Lockport, N. Y., operating in 1877. Since that time a great volume of information has been accumulated which is condensed into concise and handy tables, charts and diagrams. Every heating and plumbing contractor or engineer should acquaint himself with this information or at least should know where he can obtain it. For his benefit it might be mentioned here that an abundance of such information is available in the handbook of the National District Heating Association. New developments in district heating research and practice are announced and described frequently in "Domestic Engineering."

THE JOB OF THE DOMESTIC ENGINEER

IT IS easy to obtain books and reports on district heating practice from publishers and associations, catalogs and circulars on district heating equipment and in-

stallation from various manufacturers and to supplement this with experience in plumbing and heating work. But it is an entirely different task to secure the job of installing district heating equipment. It is limited principally to the installation of the equipment in customers' buildings. But in order to execute a first class job, one should be familiar with the entire district heating system, especially with the design and construction of the central steam mains, distribution lines, manholes and intakes to the buildings.

When a district heating system is planned, an extensive survey is first necessary in order to determine the possible number of customers for the present and the possible increase by the year, the extent of the area to be covered, the type of service whether business, residential, etc., the prevailing temperatures throughout the year, business conditions in summer and winter when a tourist city is considered, as for instance Denver, the kind of fuel available and other conditions which affect the design of the heating plant, supply lines and heating elements.

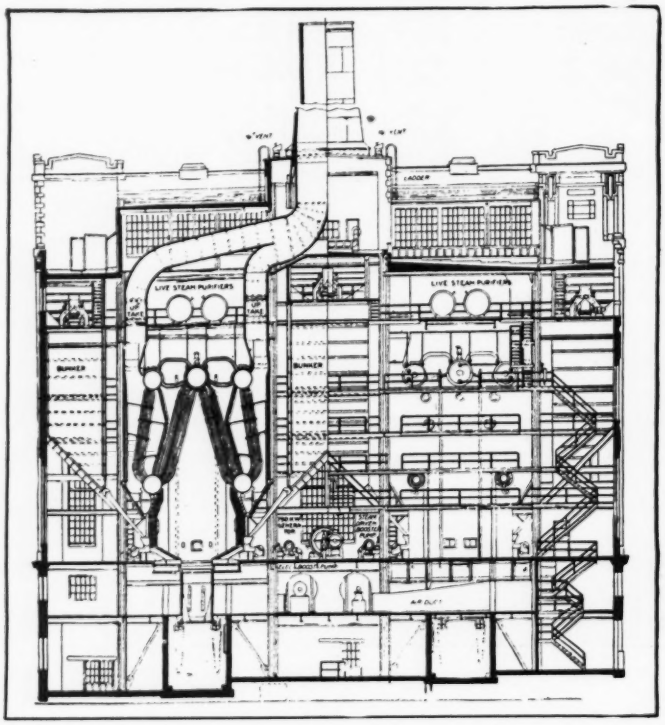


Fig. 1.—Sectional elevation of the Congress St. heating plant of the Detroit Edison Co.—typical of modern district heating plant design

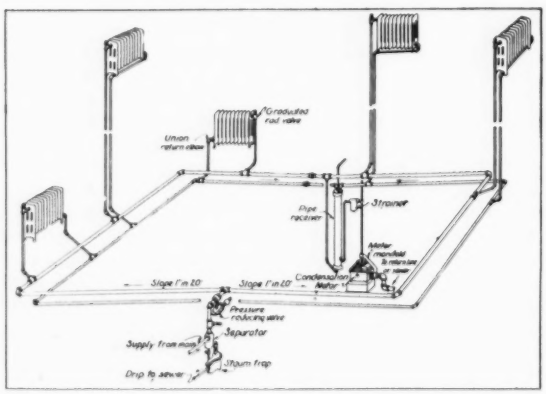


Fig. 2.—Typical layout; central station supply for a dwelling

It is very important that detailed figures be obtained for every possible condition not only in designing a heating system but also in operating it. This is also necessary when extending the system. It makes possible greater returns and more economical operation. Such statistics may be procured from progressive district heating plants. An example is the district heating system of the Pacific Gas and Electric Co.

This company supplies approximately 500 customers in the business and residential districts of San Francisco with steam for heating the buildings, heating the domestic hot water supply also to a certain extent it supplies the heat for cooking in restaurants. Two boiler plants of about 1,500 horsepower capacity each generate and then deliver steam at 100-lb. pressure through about nine miles of distribution mains. In the buildings, the steam is reduced to 25 lb. for cooking and to 5 lb. for heating. The heating system covers a combined radiating surface of 371,000 sq. ft. Steam is charged for by meter rates and the measurement is made by condensation meters. California fuel oil is burned under the boilers. The oil is hauled in tank trucks and stored under the sidewalks. The winters are mild and no very great peak loads occur. Some steam is used throughout the summer. The figures in the Table on next page were supplied by the Pacific Gas & Electric Company.

THE SWITCHBOARD OF A DISTRICT HEATING SYSTEM

AN ECONOMY-PRODUCING feature of the district heating system is the load dispatching equipment. One example is that of one of the systems of the Illinois

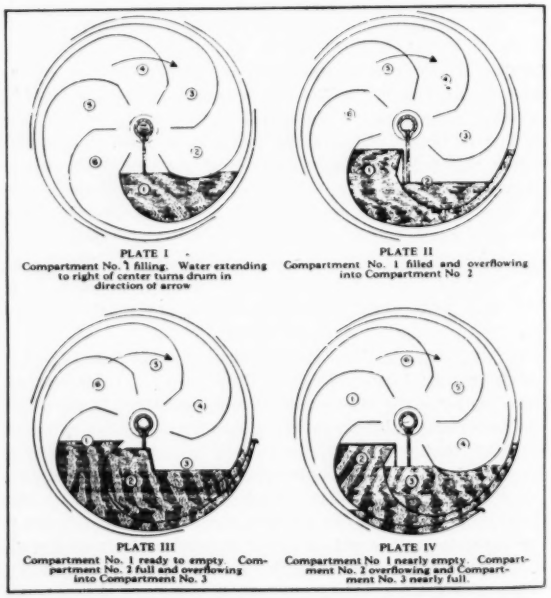


PLATE I
Compartment No. 1 filling. Water extending to right of center turns drum in direction of arrow
PLATE II
Compartment No. 1 filled and overflowing into Compartment No 2
PLATE III
Compartment No. 1 ready to empty Compartment No. 2 full and overflowing into Compartment No. 3
PLATE IV
Compartment No 1 nearly empty Compartment No. 2 overflowing and Compartment No. 3 nearly full.

Fig. 3.—Diagram showing cycle of operation of condensation meter

Maintenance Co. in Chicago. Its switchboard, located in the chief engineer's office, bears the recorders and integraters of 14 flow meters and also 4 long distance recording pressure gauges. A private telephone system completes the equipment. The flow meters are located at advantageous points in the supply system which includes 13 blocks or about 50 buildings with 6 boiler plants. A similar installation is that of the Gair Realty Corp. in Brooklyn, N. Y., which purchases steam exclusively for its tenants in 7 city blocks, selling it to them, except the smaller customers, through the flow meters.

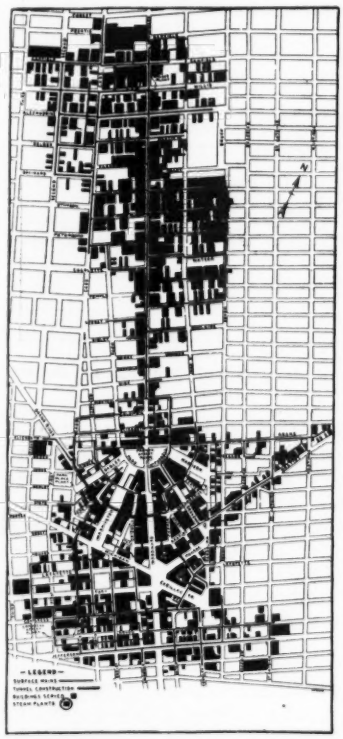


Fig. 4.—Map of heating system of the Detroit Edison Co. showing the number of buildings served on Dec. 12, 1923

Many district heating companies have prepared charts and tables for their own use, in which the necessary boiler output and necessary temperature in the system is indicated for each outdoor temperature, each wind velocity and each hour of the day or the week. Some of them have also data in regard to direction of strong winds, in fact on every condition that affects the load and output capacity of the heating system. Of particular interest is the data compiled by the exhaust steam and hot water district heating plants in Springfield, Massachusetts.

The distribution mains of a large district heating system are of enormous size. The main of the Detroit-Edison Co. in Detroit serves a radiation surface of 4,000,000 sq. ft., covering an area 2 miles in length and about ½ mile wide. There are 20 miles of underground mains and 2 miles of accessible tunnels which distribute the steam to about 2,000 customers. Condensation meters are used.

It is estimated that wood-constructed conduits have an average life of 20 years and concrete-constructed conduits of about 30 years. An example of recent steam main construction is that in Pittsburgh. The Allegheny County Steam Heating Co. at Pittsburgh, Pa., has been placing

Data on the San Francisco District Steam Heating System for 1926

Month	Water used for boilers and other purposes in cubic feet	Boiler Efficiency in per cent	Steam Delivered in thousand pound	Steam Sold in thousand pound	Overall Efficiency in per cent	San Francisco mean temperature degree F.
Jan.	863,485	76.8	52,520	38,456	55.1	48.0
Feb.	637,050	76.7	38,661	33,757	65.4	56.0
March	537,442	75.3	32,966	24,684	55.7	60.6
April	462,905	75.7	28,343	20,957	55.2	61.6
May	459,906	79.6	28,301	18,053	50.4	61.0
June	455,725	78.3	28,437	18,571	51.4	59.2
July	436,661	78.8	26,828	18,297	53.3	61,1
Aug.	442,496	78.1	26,300	17,414	49.4	60.8
Sept.	408,575	77.7	25,214	18,193	55.8	61.2
Oct.	433,895	78.6	26,732	16,915	49.4	63.4
Nov.	474,910	78.0	29,454	19,111	50.5	60.9
Dec.	711,665	76.9	43,877	28,846	50.5	51.5
Total....	6,324,715	.....	387,633	273,254	.....	.....
Average..	527,059	77.4	32,302	22,771	53.8	58.8

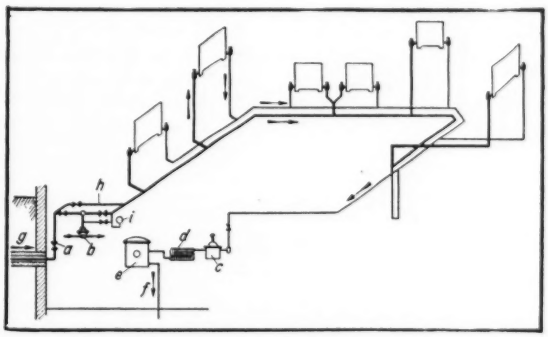


Fig. 5.—Layout of a district steam heating system connection from Europe. a. gate valve; b. pressure reducing valve; c. trap; d. economizer for heating air or water with hot condensate; e. condensate meter; f. drain to sewer; g. steam supply from steam main; h. by-pass line at pressure regulator; i. manometer or pressure gauge

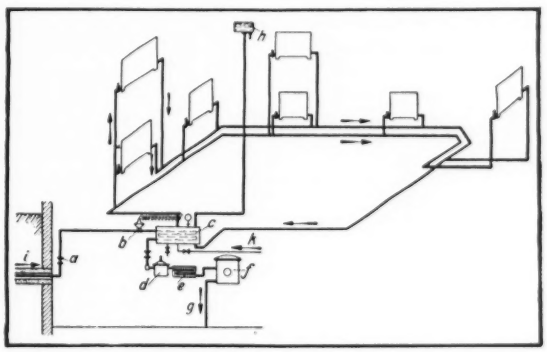


Fig. 6.—Layout of a district hot water heating connection from Europe. a. gate valve; b. thermostat control; c. water preheater; d. trap; e. economizer for heating air or water with hot condensate; f. condensate meter; g. drain to sewer; h. expansion tank; i. water supply from heating plant; k. city water main connection

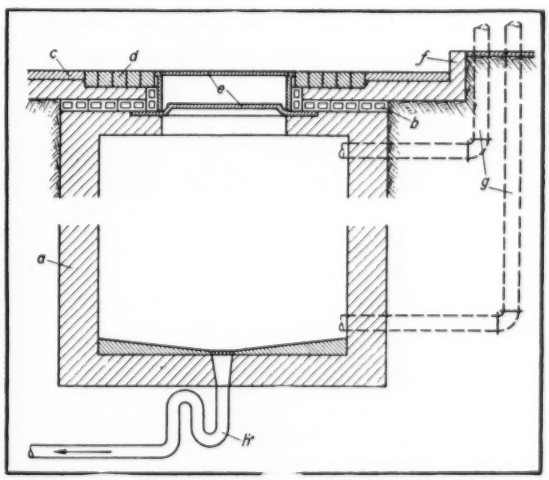


Fig. 7.—Cross section of manhole in district heating steam main. a. concrete wall; b. tile; c. asphalt; d. wood and stone support for cover; e. double manhole cover; f. gutter; g. ventilating tubes; h. drainage to sewer

new piping in a reinforced concrete tunnel 1,800 ft. in length. The pipe lines are 32-inch, 28-inch, 24-inch and also 20-inch low pressure distribution mains operating at pressures between 10 and 23 lb. gauge, depending upon

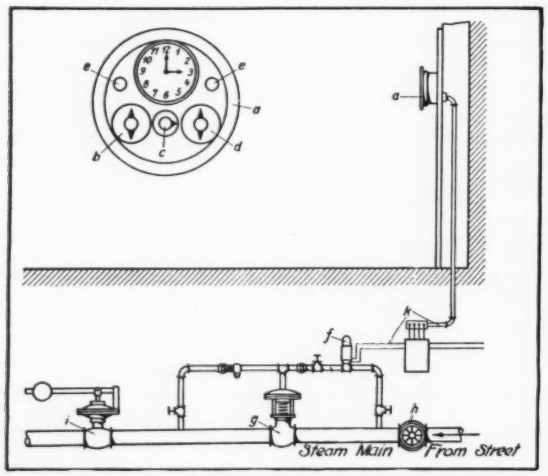


Fig. 8.—Control equipment for continuous heating service. a. control clock; b. day switch; c. heating up switch; d. night switch; e. signal lamp with red and green light; f. control valve; g. steam intake valve; h. gate valve; i. pressure reducing valve; k. current supply

the season of the year. The same tunnel also carries high pressure steam and condensate return piping, this method decreasing the cost of heat transmission to the consumers.

The concentric piping system has special advantages

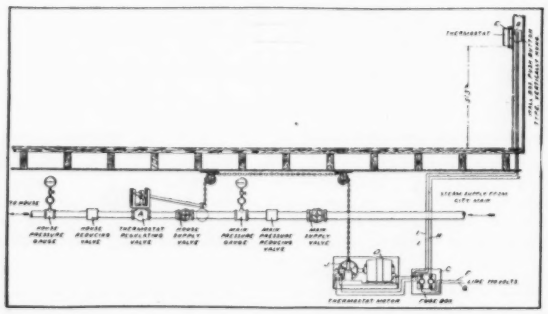


Fig. 9.—One make of motor control for controlling steam from district heating plant

when high pressure steam is to be sent in large quantities over long distances to serve districts remote from the station. In this system the high pressure and the low pressure lines are enclosed in a single steel conduit. By this

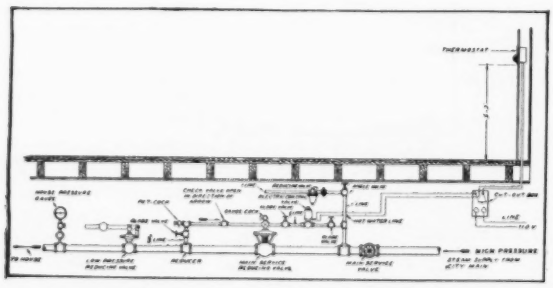


Fig. 10.—One make of electric valve control for controlling steam from district heating plant

method the combined condensation from both mains was about 25 per cent of what would have to be expected in separate high and low pressure mains, according to J. E. Woodwell and Claud R. Erickson who made such an in-

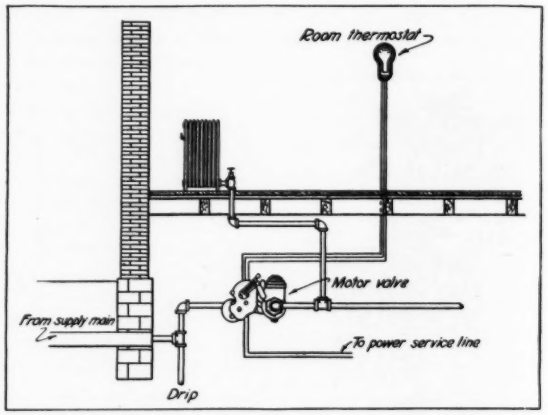


Fig. 11.—Room thermostat for central heating or factory work room control

stallation for the Board of Water and Electric Light Commissioners at Lansing, Mich. The details are given in the 1927 papers and reports of the National District Heating Association. The quality of the low pressure steam furnished to the customers was thus considerably improved.

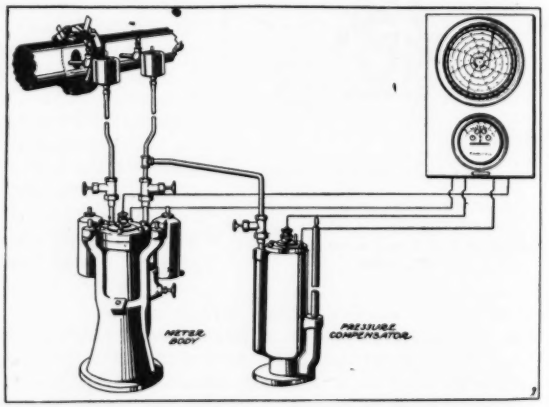


Fig. 12.—Hookup of a flow meter to district heating steam line to measure record and integrate steam flow

WELDING AS APPLIED TO DISTRICT HEATING

WELDING is becoming more and more useful to the heating and plumbing contractor. Prior to 1925 the Rochester Gas & Electric Corp., Rochester, N. Y.,

Table for Determining Temperature in Heating System in Relation to Outdoor Temperature and Wind Velocities*

Outdoor temperature in degree Fahr.	Air velocities in ft. per second 0-8.2	14.7-22	29.2-33
	Hot water temperature in degree F.		
70	90	90	90
60	105	106	109
50	119	120	122
40	135	137	141
30	150	152	155
20	165	167	170
10	180	182	185
0	193	195	199
—10	203	205	209

*For the time from 9:00 A. M. to 4:00 P. M. During bright sunshine between 8:00 A. M. and 5:00 P. M. the water temperature may be 9 degree F. lower.

(Continued on Page 58)

Condensing Tanks

SOME time ago we received a letter quite severely criticising two illustrations that appeared in connection with one of the Schoolmaster articles. The letter in question is as follows:

"On page 34 of the March 24, 1928, issue, Figs. 13 and 14 relating to condensing tanks are a surprise to me, coming as they do, from a master or teacher.

"Fig. 14 is correct except for one very vital item, the most important point is wrong.

"The ell at the bottom on the right side of the cut on the discharge pipe should be a tie with emptying lock on run-out line. At this point you will relieve scale, etc., which will plug the short turn ell solid—and there is always scale or similar matter.

"Otherwise the layout is correct in detail. Now as to Fig. 13, I must say 'shame on you' for even suggesting that it is properly connected. My honest opinion is that it could not be worse. The inlet and tank are O. K., but you stop right there.

"(1) Any leg pipe (drop or otherwise) inside a tank of any sort or for any use, is never correct, when it will perform the same duty if run outside of tank, as in Fig. 14.

"(2) Your 'vent pipe' is a steam by-pass direct to sewer. This pipe should go through roof, separate from all connections; the relief, of course, should do the same. Your vent system returns sewer gas to the tank, boiler steam lines, radiators, and through vent valves if boiler is empty in summer.

"You also failed to add to Figs. 13 and 14, if city pressure permits, a cold water line to reduce the temperature of discharge from tank to sewer.

"Trusting this will help to make a better teacher of yours truly, I beg to remain,

"Yours,

"T. J. Murphy,
"Eldorado, Kans."

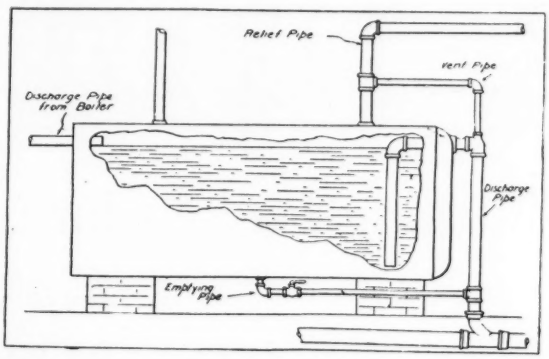


Fig. 13.—Connections for condensing tank.—From March 24, 1928, issue

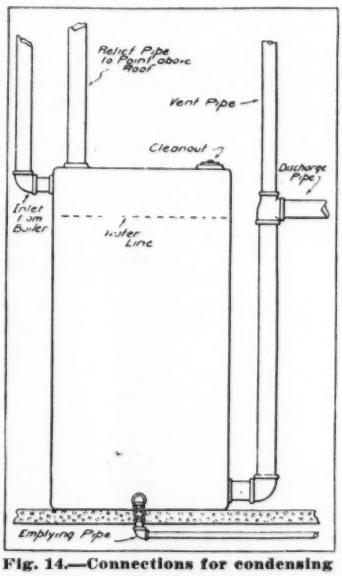


Fig. 14.—Connections for condensing tank.—From March 24, 1928, issue

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These two illustrations, which appeared in the March 24, 1928, issue, are again here shown.

We will consider first Fig. 14, which is first taken care of by our critic.

The correct size for the discharge pipe is 3 inches, although no size is shown in the illustration. With that size it would be very difficult indeed to stop up the bend with scale, rust, etc. It is to be noted in this connection, however, that the tank is provided with a cleanout, and through this cleanout hole the tank may be properly cleaned.

We might say that the plumbing code for the state of Ohio shows a tank and connections the same as Fig. 14, and the Ohio State pilot drawing shows the same thing, and so far as we know, this type of installation has proved very satisfactory over a period of many years. A recent issue of the Ohio code shows these connections exactly as they are here, without change.

Regarding the criticism of Fig. 13, the point that is raised against the vent pipe is well taken. This pipe forms a by-pass between the drainage system and the living rooms of the house, as our critic points out. The pipe is small in size, and the chance of entrance of sewer odors very slight, owing to the fact that conditions would need to be just right in several respects, for this result to happen. Nevertheless, the only right way is to take no chances whatever, and we would therefore agree that this pipe should not be used.

It should be understood that the purpose of the pipe is to bring in a supply of air to prevent siphonage of the contents of the tank. Inasmuch as this pipe serves the same purpose as the vent for any other trap, it may be connected into the vent system.

We are glad to have this feature brought to our attention, and now that it is pointed out, it seems strange that it should not have been noted before, for during many years this has been one of the most common methods of connecting condensing tanks.

As to the second criticism, which concerns the trap formed by a pipe dipping down inside the tank, instead of forming it by a pipe outside the tank as in Fig. 14, no doubt it is sound, theoretically so, at least. The forming of a trap by this means is such a common thing, however, that we would not want to condemn it too severely.

We very much appreciate constructive criticism such as Mr. Murphy has made, and consider that much benefit results. Here is a thing that has gotten by for years, and should be corrected, and we are glad to have the error uncovered and to give publicity to the matter.

THE LENGTHENING SPAN OF LIFE

Human life has lengthened from 22 years, due largely to modern methods of sanitation, in the Middle Ages to 58 years today but it is the conviction of the Insurance Department of the Chamber of Commerce of the United States that it can be made even longer by co-operative effort. It would seem possible to continue the advance to the 62 years of New Zealand and then to the 65 years which authorities say is eventually possible.

Make a Plumbing Layout for this Home

The Schoolmaster

Details of Operation of "Domestic Engineering's" World Wide Plumbing Class

(1) A Plumbing Problem is published in "Domestic Engineering."

(2) Readers send in solutions of the problem or discuss it in a letter.

(3) The Schoolmaster studies the solutions and letters sent in.

(4) The Schoolmaster prepares an article in which he comments upon the solutions and discussions sent in, makes correction, answers questions, etc.

(5) The Schoolmaster article is published in "Domestic Engineering."

(6) Those who send in solutions and thousands of others study these articles which is the reason they frequently have been spoken of as "The greatest single factor in plumbing education."

Every reader is urged to take part in these plumbing conferences. All that is necessary is to send in a solution of a problem, a question, a comment or a discussion of a problem.

No one should hesitate to send in a plumbing solution because he cannot draw well, for each drawing sent in must be redrawn in India ink so that it can be made into a zinc etching for printing. The ability to make good plumbing layouts is, however, a factor of increasing importance toward success in the plumbing business.

Each drawing, solution, question, comment or discussion should bear the name and address of the sender and date of the issue in which the problem appeared.

Initials only or an identifying name will be used in connection with the publication of a drawing or letter if requested.

THE PICTURE of the house on which this problem is based, shows quite a clever design, according to our way of thinking.

At first glance it would be taken for a single house no doubt, but in reality it is a duplex house, showing two comfortable homes. But no home is comfortable now without plumbing comfort. And what was not so long ago an out and out luxury, is no longer such, for as our standard of living has advanced, we have just naturally felt that it was our right to have a full measure of these modern comforts, whether plumbing, electric or better meals.

And so each of these homes is provided with two bathrooms, as the floor plans show.

First, second and third floor plans are given, and in addition we want you to make a cellar plan, in which you are to locate a water closet and set of wash trays for each side of the house. You are at liberty to place the two fixtures wherever you like, but our suggestion would be to put them where the cost of installation will be as low as possible.

When we ask you to make a cellar plan, we mean by that that we want you to send it in to "Domestic Engineering" for publication along with the drawing that we want you to make of the plumbing for this house.

The only fixtures we have located on the floor plans are the two kitchen sinks. We want you to locate the fixtures in the two bathrooms, also a lavatory in each of the long bed rooms on the second floor.

Having done all this, which should include the laying out of the horizontal piping in the cellar, and the location of the stacks on each of the floor plans, then we want you to make one or more elevations of the plumbing system that is to serve this house.

If you think the work can be most clearly shown by one elevation covering the entire system, work it out that way, using straight mechanical drawing, isometric or any style of drawing that you are most familiar with. On the other hand, if you feel that you can get clearer results by making a separate elevation of each stack, work the problem out that way.

The big idea is to make your elevation or elevations tell the complete story of the plumbing for this house as clearly as it is possible.

Send in your work, and in due course "Domestic Engineering" will show your work and give a discussion of it, in a special article devoted to the consideration of this problem.

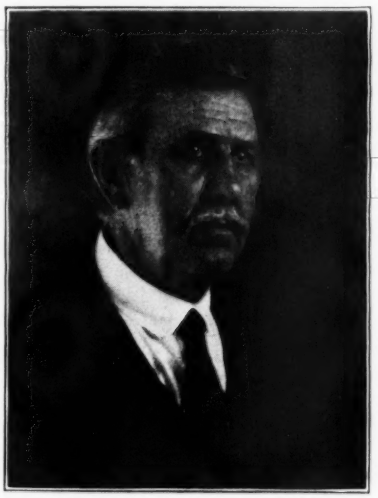
If you are familiar with the plumbing practice recommended for dwellings in the Hoover Code, it would be a fine thing to work out this problem on that basis, and if you are not familiar with the Hoover Code and recommendations, you ought to get busy and become posted, for more and more of our towns and cities and states are adopting it.

Speaking of the Hoover Code, no doubt it is clearly understood that this code and the equally valuable recommendations which accompany it, apply only to dwellings and similar buildings.

As we have said many times before, probably no single factor has ever in the history of plumbing, done so much for the advancement of the trade as this work, which was carried on by the Department of Commerce under Secretary Hoover's direction, and with the active co-operation of the U. S. Bureau of Standards.

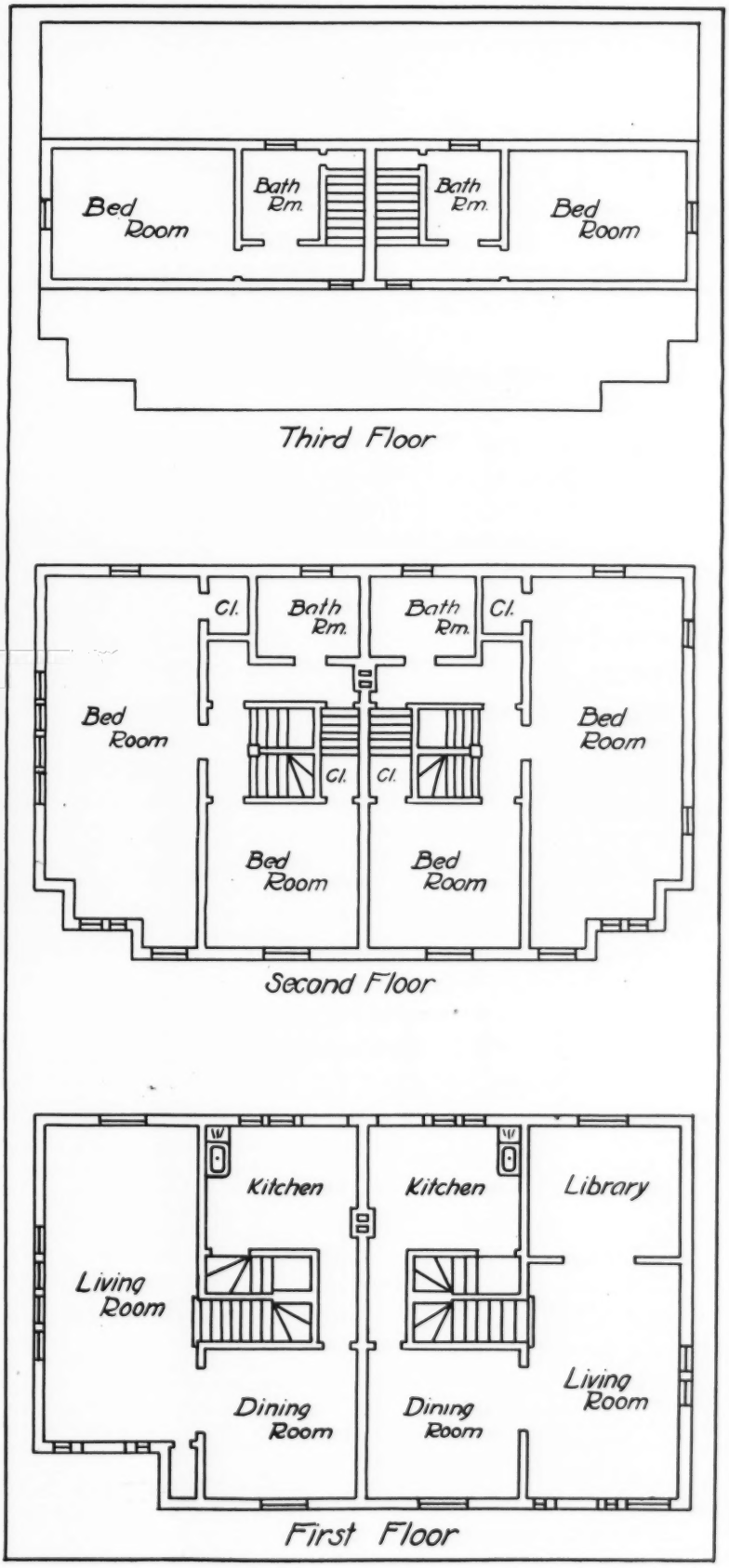
To those of us who have had occasion to make the greatest use of the Hoover Code and recommendations, perhaps the greatest drawback has been the fact that it was applicable only to dwellings, and not to large installations.

To all of us then, it will be welcome news that efforts are under way to the end that investigations similar to the original Hoover work may be undertaken regarding larger work.



A. F. Bellingrath, Decatur, Ga., retired plumber, writer on plumbing subjects and a frequent contributor to the Schoolmaster articles. His training in public school, high school and university, his experience as sanitary engineer, and master plumber and his activities in the state association of Georgia and in the National Association of Master Plumbers, enables him to have a keen appreciation of the plumbing instruction afforded by "Domestic Engineering"

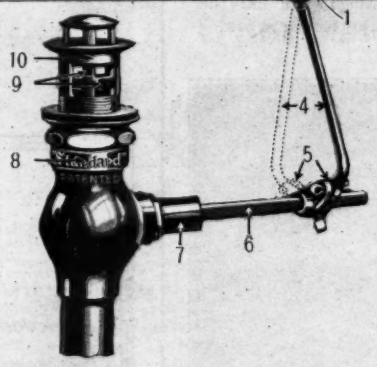
At the recent 46th annual convention of the National Association of Master Plumbers, held at Memphis, Tenn., resolutions were adopted commending the work of the building code committee of the Department of Commerce, and its work on plumbing and recommending that funds be appropriated by the government to carry forward a program of plumbing investigation by the Bureau of Standards relative to peak loads on drainage systems and other data relative to high buildings.

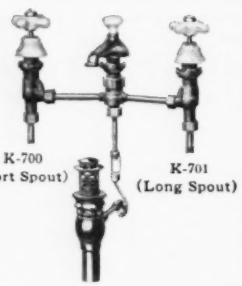


Push or Pull –

as your customers prefer

"Standard" Princess Pop-up Drain K-760 Patent No. 1254897 1610812

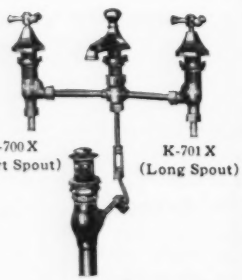




K-700 (Short Spout) K-701 (Long Spout)

The K-700 and K-701 York Combination Lavatory fitting is furnished regularly with the Princess Drain.

The York fitting is beautiful in appearance and is accurately made of the highest-grade material. It has Re-Nu valves and a single spout supplying tempered water, and gives unusual satisfaction.



K-700X (Short Spout) K-701X (Long Spout)

The York fitting is available in the new hexagonal "Standard" Mastercraft design with either Chromard Finish or gold-plate.

When they push the knob down, the stopper comes up! When they pull the knob up, the stopper comes ***up!*** Whichever way your customer prefers his lavatory drain to be set, the "Standard" K 760 Princess pop-up drain is the one type which can be so installed.

There are 11 good reasons why the Princess drain is the most practical and efficient drain on the market today. They are shown on the illustration and are facts you should know—

1—Self adjusting. Ball joint automatically adjusts lift rod at proper angle, irrespective of irregularities in slope of slab or bowl of lavatory. Also acts as a swivel, permitting handle to turn without working loose from lift rod.

2—Lock washer is an additional safeguard against handle and lift rod becoming disconnected.

3—Turnbuckle allows 1½ inch adjustment.

4—Bent lift rod offers least resistance.

5—By reversing fulcrum, operation is changed from push to pull. This permits choice of methods, with the same positive action assured either way.

6—Hexagonal operating arm allows fulcrum to be adjusted.

7—Extended sleeve gives additional support to operating arm.

8—Long extension to cover threads when extreme adjustment is made.

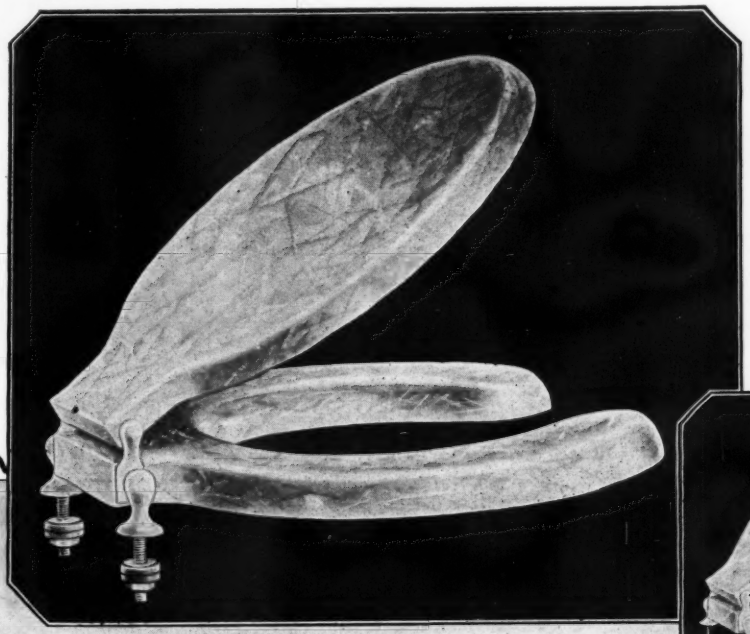
9—Interlocking feature of stopper prevents removal by children.

10—Long plug permits use for either enameled or vitreous china lavatories.

And ***eleventh***—the drain fits the lavatories of practically every manufacture and thereby offers you unlimited new and replacement sales opportunities.

"Standard" BRASS GOODS

Standard Sanitary Mfg. Co.
PITTSBURGH



"Standard" PLUMBING FIXTURES

F 6505
Pearl Finish—fits practically all closets

F 6511
Pearl Finish—for extended lip closets

Do you *preach* what you *practice?*

How often have you entered a store intent on a $10.00 purchase, but have come out with a $20.00 package under your arm? It is safe to say that most buyers will repeatedly display the same tendency.

Let's assume, with full assurance that such is the case, that every person entering your shop is a live prospect for a closet seat sale. Show him a cheap, ordinary seat and that seat is the one he will probably buy. Reverse the procedure —show him the best, assuming he wants nothing else—and you will be surprised how many times your assumption was correct.

High-powered salesmanship is really unnecessary. All you need is a sample or two—a "Standard" colored mother-of-pearl Ivorite seat, with its double strength and double thickness, and a "Standard" white Ivorite seat—both beautiful in appearance, with smooth, sanitary, easily cleaned surfaces.

And one, or preferably both of these samples, should be of the increasingly popular open-front type, with its very evident sanitary and health-protecting features.

The apparent built-in beauty and the superior sanitary features of these "Standard" Ivorite closet seats will supply all the sales talk you need.

Nine colors of pearl finish for your customers—

Green - Yellow
Purple - Golden
Gray - Blue
Pink - Black
Parisian

Standard Sanitary Mfg. Co.
PITTSBURGH

Ventilation *in the* Light of British Scientific Research

Arthur W. Barnes

Part No. 2

PROFESSOR LEONARD HILL, the eminent scientist of England, who was mentioned in the first part of this article as having done so much for the science of ventilation, has stated definitely that, during the course of our ordinary everyday lives we are not likely to incur any risk of danger from a shortage of oxygen. Even in crowded places of assembly there is always a sufficient quantity of oxygen present. The danger comes from the various other sources which were mentioned in the first half of this article in the issue of June 23. This investigator has further stated that only in such places as certain sections of mines and in submarines is there likely to be a real shortage of oxygen. This danger may, however, be encountered in wells—generally deep wells.

Carbon Dioxide May Still Serve as a Reliable Indication of an Injurious Atmosphere

People that are unacquainted with the principles of scientific ventilation sometimes ask ventilating engineers why carbon dioxide need be removed if it is not injurious. The answer is that a low percentage of carbon dioxide indicates (especially in places of assembly, factories, workshops and workrooms) that the air is being fairly frequently changed, and, so long as the air is being thus changed, there must be air movement.

Heat Stagnation

Change and movement of the air are the most certain safeguards against that arch enemy, heat stagnation. Stated in another manner, a high percentage of carbon dioxide indicates that the air is not being changed often enough, consequently there is a lack of air movement with a corresponding increase in the temperature and humidity, which of course results in heat stagnation and all the dangers that are associated with it.

Let us suppose that we have to deal with a well-filled place of assembly such as a theater. Each adult present will give off about 290 B.t.u. per hour, of which 191 units are transmitted in the form of radiant heat to surrounding objects, the other 99 units being given off as vapor. With so much heat and vapor being continuously given off, the danger of heat stagnation will be apparent, and the need for air change and movement is easily understood. Once again it may be stated that a low percentage of carbon dioxide indicates that the air is being satisfactorily changed, and the air movement thus brought about will probably be effective in preventing any danger from heat stagnation.

Ventilation for Unhealthful Trades

A number of trades call for special systems of ventilation in order that the workers may be protected from injury by harmful matter which would otherwise find its way into their breathing passages and lungs. Chief among such harmful products are the very minute particles of metals, silica, flint, sandstone, quartz, and other injurious forms of dust which are given off by the various manufacturing trades. A ventilating engineer gives very careful consideration to the planning and erection of ventilating systems for such unhealthful trades.

Relation of Outdoor Occupation to Longevity in Great Britain

In the course of a lecture which Professor Hill delivered a short while ago, he said: "In a chart showing the mortality rate per thousand, in agricultural and industrial districts, due to respiratory diseases, there is a rapid rise between 55 and 65 years of age for the agricultural people, but the rise is much more rapid for industrial people. Agricultural people have a very low wage generally, housing is very imperfect, drainage is bad, the water supply is often bad, and yet agricultural people—all open-air workers, in fact—have a better mortality rate than industrial people, who have much more money, can afford better food, and have all the advantages of cities in sanitation, in which great advances have been made in the last fifty years. We have lowered the death rate, and improved health, but the proportionate advantage of the agricultural people persists undiminished during the period of this advance.

"In the last decade, wonders have been done in lessening the mortality of infants and young children—infant mortality has been almost halved. The expectation of life, we are told, has gone up twelve years, but that does not mean that we are living twelve years longer. The expectation of life has gone up for infancy but not for the period of late middle age. Our grandfathers are living scarcely any longer than they did fifty years ago. We should now attend to the adult population as well as to the infants."

Man's First Line of Defense Against Dust and Microbes in Air

A microscopical section of the respiratory membrane of one of the bronchial tubes shows the cleansing mechanism, the ciliated epithelium with the blood capillaries below it. The cilia drive up dust and bacteria towards the mouth and nose where they are got rid of. We have another defensive mechanism in the white corpuscles of the blood. These deal with microbes which get through the ciliated epithelium. A fluid is secreted by these cells and also by glands in the sub-mucous tissue, and dust and microbes are caught in the wet film which covers the respiratory membrane. It is very important that we should have an ample supply of fluid passing through the membrane and that the blood should come out of the blood capillaries and soak through the epithelium. The saturation with moisture of the air that we breathe keeps this action going.

Suppose one breathes frosty air that is so favorable to health. Air at that temperature (freezing) will hold about five grams of water vapor per cubic meter. At

No. 999

The new ARCO PACKLESS VALVE

NEW PRICES

NEW BEAUTY · MECHANICALLY IMPROVED

MEMBERS of the heating profession know that Packless Radiator Valves should be used on every job—large or small; steam, water, vapor or vacuum.

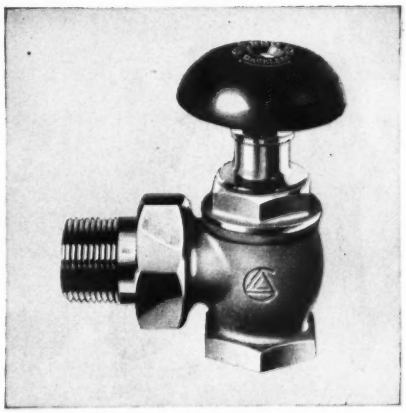
Every heating merchant will wish to give his customers the advantages of Packless Valves—Packless protection against expensive leaks; Packless relief from the annual cost of repacking; Packless assurance against the leakage of air into "below atmosphere"—vacuum-installations.

You know that ARCO Packless Valves will save owners their cost over and over again—that in the long run they are actually less expensive than packed valves.

Because this is so, the American Radiator Company has been striving to build an ARCO Packless Valve so priced that you can sell it on *every* job—an ARCO Packless Valve that will give the same protection to the owner of a cottage, a palatial residence or a towering skyscraper.

The American Radiator Company has produced this valve and now presents the new ARCO Packless No. 999. Handsome in appearance—Sturdy—Opens with one smooth turn—And at a price that represents the greatest value ever offered in the field of radiator valves.

Write today for prices. The sale of this valve will mean more business for you. Three minutes of your time or your journeyman's will make extra dollars for you and save dollars for your customer. Every prospect will quickly and gladly pay the trifling difference in cost per job between the New ARCO Packless 999 and the cheapest packed valve made. All you need do is explain the benefits and saving of ARCO Packless Valves No. 999.



The New ARCO Packless Valve No. 999

THESE valves are made in sizes from ½" to 1½" inclusive and in Angle, Corner, and Globe patterns with round and lever handles, also in graduated types. In addition, they are available in the "True Corner" type especially suited to Phantom radiation.

They are of sturdy design throughout, amply heavy for any possible kind of heating service. They have liberal hexes, nuts and tail pieces and are easy to install. They will last throughout the life of the building.

They are handsome in appearance and are well finished.

A feature of prime importance is that when used on one-pipe steam systems, the return flow friction is reduced to a minimum and the water of condensation has free egress. They are thus well adapted to one-pipe steam and all other types of heating systems.

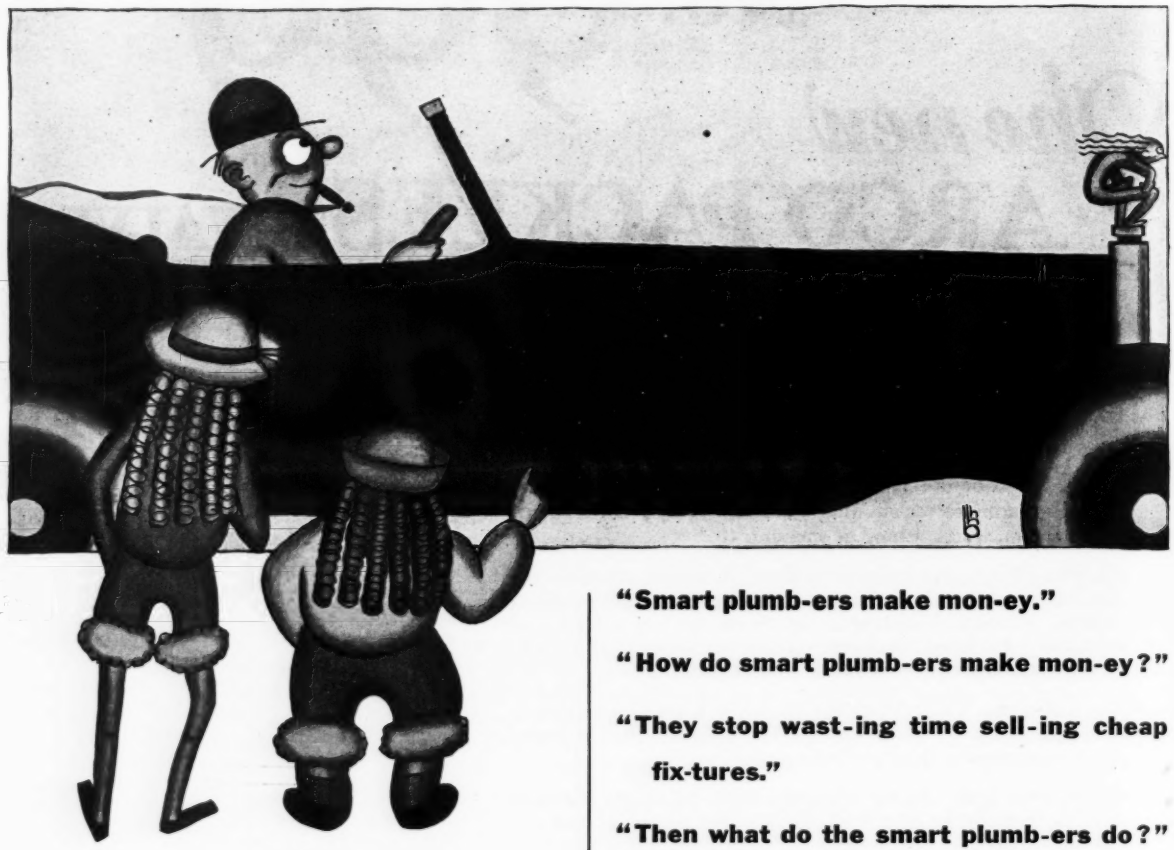
AMERICAN RADIATOR COMPANY

ACCESSORIES DIVISION, Dept. "H"

40 West 40th Street New York, N. Y.

Makers of IDEAL Boilers, AMERICAN Radiators, ARCO Tank Heaters, VENTO Ventilating Heaters, AIRID Air Valves, MERCOID Controls and devices for drying, humidifying, cooling and refrigeration.

The Plumbing Primer



"Oh! see the Big Oil Mag-nate."

"That is not a Big Oil Mag-nate. That is a smart plumb-er."

"Oo! How did he get the bug-gy?"

"By com-ing a-cross with the maz-u-ma."

"Where did the plumb-er make the maz-u-ma?"

"In the plumb-ing bus-i-ness."

"Oo! Do plumb-ers make mon-ey?"

"Smart plumb-ers make mon-ey."

"How do smart plumb-ers make mon-ey?"

"They stop wast-ing time sell-ing cheap fix-tures."

"Then what do the smart plumb-ers do?"

"They sell the Im-prov-ed Mad-era."

"Do they make more maz-u-ma?"

"I will tell the cock-eye-d world. Four times as much."

"Is it hard to sell the Mad-era?"

"No, be-cause it is a much bet-ter toi-let and ad-ver-tis-ing tells the people why."

"Gee! I wan-na be a plumb-er."

MADDOCK'S *Improved*

MADERA

THOMAS MADDOCK'S SONS CO. ▪ ▪ TRENTON, N. J.

body temperature, saturated, it will hold over forty grams, so that it will take 35 grams of water to saturate each cubic meter of that cool frosty air. If we breathe ten cubic meters we should evaporate 350 grams of water. In the stagnant air of a crowded room, saturated with moisture and warmed up to body temperature, less body vapor is required to bring about saturation, and the working of the mechanism for passing fluid through the membrane is lessened. One of the advantages of open-air treatment is the breathing of this cool air, which contains little water vapor, and, when warmed up to body temperature, can take up a great deal. The great washing and cleansing mechanism is thus kept up. That is one of the reasons why open-air people suffer less than indoor people from catarrhs and colds. In sanatoria, patients who are undergoing open-air treatment suffer less from colds than the nurses or the ordinary public in a city.

Microbic Infection

Let us now turn to the question of microbic infection. Respiratory and many other diseases are spread, as we believe, by the spraying out of specific microbes in coughing, sneezing and speaking. A fine spray of saliva is spread some yards about the person. The danger zone is about one or two yards. In crowded shut-up rooms the danger is increased. Carriers of microbes are always present, consequently microbes that are harmful to health are spread about. If one inhales large numbers of bacteria, he is more likely to fall a victim than would be the case with small doses. When he is in a crowded stuffy room, the danger of contagion is much greater.

Dust in Industries

It is fitting that in this connection we consider the subject of dust. We want to get rid of dust in the atmosphere because the ciliated epithelium may get clogged by it. Some dusts are more harmful than others. There is a high death-rate among miners working with silica dust and with lead---a high death rate due to phthisis. Silica dust, especially, produces a slow chronic degeneration. Tin miners in Cornwall, granite workers, and workers in many other occupations of this kind have an excessively high death-rate from phthisis. In the case of flint workers the death-rate is extraordinarily high; none of them lives to be much over forty years of age. That kind of pernicious dust can be got rid of. Its harmfulness is due not only to the hardness of silica, but to its chemical action. In the case of grinders, the dust can be got rid of by proper extraction ducts, and in mines, by water sprays to lay it. There must also be exceedingly good ventilation.

Chemistry of Air and Its Relation to Health

We have said nothing hitherto about the chemical characteristics of air. So far as oxygen and carbonic acid gas are concerned, there is never enough difference to have any effect upon our health. We always keep thirteen or fourteen per cent of oxygen and about five per cent of carbonic acid in our lungs, and the respiratory center maintains the right amount. Only in quite closed places, or where carbon monoxide has to be contended with, is there any real danger. As to organic chemical material in the air, it has been said that we exhale some poison, but physiologists have entirely failed to confirm that statement. There is no chemical organic substance of a poisonous nature in exhaled air. The air may have an offensive smell, but an offensive smell does not indicate poison.

Let us here introduce an instrument called the "katathermometer," for measuring the cooling power of the air. The ordinary thermometer gives the temperature of the

(Continued on Page 37)

Difficulty in Making Water Pipe Connections Overcome by Welding

IN SOME instances process service aids in operations which, on the surface, appear to be quite simple, but to the parties concerned are difficult because they have not encountered such work before in the run of the day's work.

The two illustrations show an installation which puzzled the manufacturer for some time until he thought of calling in a service operator. This firm had been doing considerable pipe welding by the acetylene process, but this new project was different from any other previously undertaken. It consisted of welding two 8-in. standard steel pipes to a large circular water tank measuring 25 ft. in diameter by 20 ft. high, the pipes to extend 2 ft. inside the tank. The difficulty arose in joining the pipes at an angle of about 22 deg. with the outside of the tank. To accomplish this, careful figuring was necessary; the size of the opening had to be computed so that pipe would fit snugly and at the same time there would be enough space left between the pipe and the edge of the opening to assure a strong and serviceable weld.

When the service operator arrived, he made the necessary patterns and calculations. Then openings were cut with the acetylene blowpipe in the sides of the tank to accommodate the pipe, and after a little instruction the plant welder made the two welded joints. Fig. 1 shows the plant welder at work on the weld which is then in the process of completion, and Fig. 2 shows the completed joint.

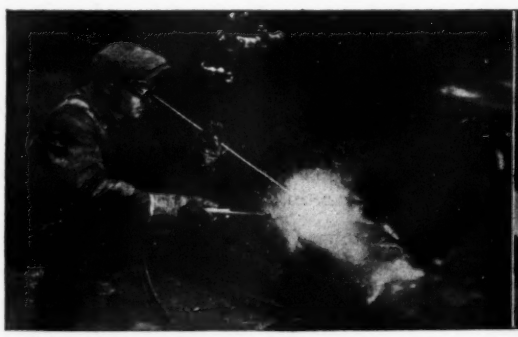
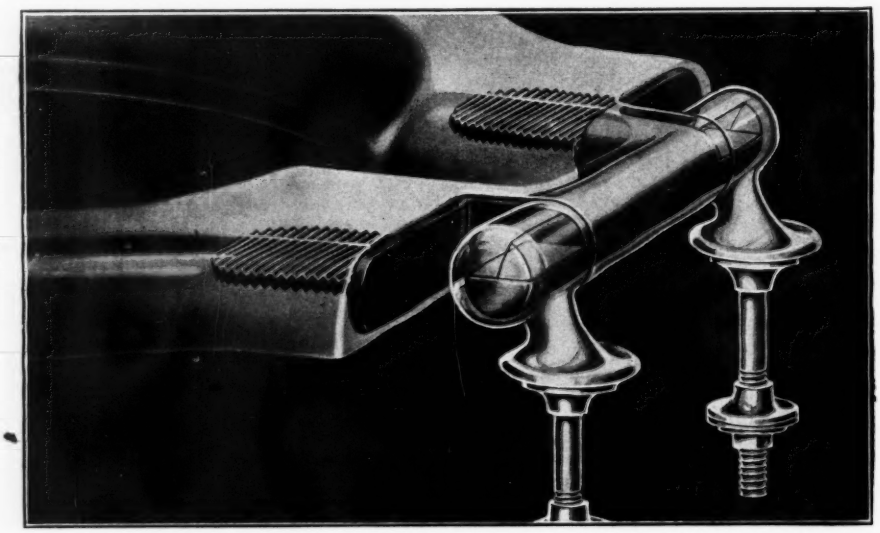


Fig. 1—Welding pipe to tank

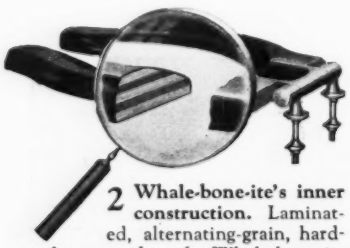
Fig. 2—Completed joint

Your Customer, *at the same price, can have* Whale-Bone-ite



Why miss Whale-bone-ite's important features?

1 The new Whale-bone-ite Hinge. Makes both seat and hinge one unbreakable solidified unit, impervious to moisture, absolutely non-corrosive. No other closet seat offers you this hinge.



2 Whale-bone-ite's inner construction. Laminated, alternating-grain, hardwood core makes the Whale-bone-ite Seat proof against splitting, warping, or cracking. Every Whale-bone-ite Seat is guaranteed for life of the building.

A WHALE-BONE-ITE SEAT costs no more than the cheapest composition closet seat. This is a fact every plumbing contractor should know. Don't think a substitute is just as good. It isn't. Only Whale-bone-ite is "like Whale-bone-ite."

Architects have for years recognized Whale-bone-ite as the standard seat for all fine buildings. No other toilet seat has proved in actual use to have this seat's amazing durability.

The Whale-bone-ite Seat is one piece . . . molded when soft into shape around a core of alternating-grain layers of hardwood. Thus it has no cracks or seams to harbor germs. No thin veneered surface to wear through. Easy to clean, non-inflammable, its beautiful surface will last a lifetime.

The new Whale-bone-ite hinge is molded in one operation as an integral part of the seat. Reinforced by a metal, die-cast, one-piece insert, it is covered with highly-polished Whale-bone-ite having the same strength and finish as the surface of the seat. Any model of Whale-bone-ite Seat may be obtained with this new hinge.

When you sell the Whale-bone-ite Seat, you sell service: long, dependable wear. Don't accept any less than Whale-bone-ite offers.

WHALE-BONE-ITE TOILET SEAT

THE BRUNSWICK-BALKE-COLLENDER COMPANY · CHICAGO

Albany	Boston	Chicago	Dallas	Detroit	Kansas City	Minneapolis	Philadelphia	San Francisco	Tampa	Ottawa
Atlanta	Buffalo	Cincinnati	Denver	Harrisburg	Los Angeles	New Orleans	Pittsburgh	Seattle	Washington	Toronto
Birmingham	Charlotte	Cleveland	Des Moines	Houston	El Paso	New York	Richmond	St. Louis	Montreal	Havana

surrounding air acting upon it; if one breathes upon it, it will not change. It merely indicates the average temperature of its surroundings, but we require something which will indicate the cooling and evaporating power of the air.

If you blow upon your own body you feel a difference, and the kata-thermometer is far more indicative of these human feelings than is the ordinary thermometer. The kata-thermometer is a large-bulbed alcohol thermometer of standard size, with stem graduated from 100 degrees to 95 degrees F. It is warmed up until it rises above 100 degrees F., the bulb is dried, and the rate of cooling from 100 degrees to 95 degrees F. is observed. This instrument shows the cooling power of still air, and the stronger cooling power of wind. To use this as a "sweating" thermometer, a wet muslin glove covers the bulb. This does not show directly the cooling of the human body, for the bulb is a small mass with a large surface, whereas the body is a large mass with, in proportion, a small surface. The bulb, therefore, loses heat more rapidly than the body. We have empirically graduated it under ideal conditions on spring days, and have found standards which we have tried to reach in rooms and factories. Unfortunately, the better conditions to which these standards would lead us have not yet become general. Cooling powers are far too low in most places.

Air Conditioning as a Remedy for Industrial Unrest

In the Lancashire cotton mills, steam is used in the sheds to keep the thread in proper condition. The workers hate the steam, which depresses them and makes them feel languid, and they say that the steam must stop. We could put the whole thing right by moving the air, and getting the weavers to wear less clothing. This would cool them and make them perfectly happy, while leaving the thread as it ought to be. There is a vast amount of economic loss in factories owing to wrong conditions, and industrial unrest is due far more to incorrect atmospheric conditions than it is to dissatisfaction with wages that may be considered too low.

That part of the body heat production given off by the lungs can be measured by inhaling through one valved tube and out through another. The expired air is collected, squeezed through an ordinary gas meter, samples

(Continued on Page 51)

Skimping the Cooling System

THEATER cooling has passed through the initial and experimental stages. While it is still the most recent of general problems in ventilation, past experience has provided a solid foundation on which a cooling system may now be designed with every assurance of having it come up to the mark after installation.

When the cooling system is added to the ordinary theater ventilating equipment, an entirely new element enters into the problem involving considerable modification in the treatment and handling of the air, the location and allowable velocity of the inlets, the distribution, and the recirculation of the exhaust air removed from the auditorium after picking up the heat and moisture from the interior, the elimination of which is necessary if conditions are to be comfortable during hot weather.

It is also necessary to combine with this cooling installation an entirely different scheme consisting of ventilation for winter use, which will potentially ventilate the theater during winter conditions. Combined with these two is an intermediate—but highly important condition—of spring and fall when the outside temperatures are too low to permit the theater to go without any heat, but, at the same time, are too high to permit 70-degree F. temperature to be maintained in the auditorium for any length of time without the aid of refrigeration. This intermediate condition covers a considerable part of the year and yet, frequently, is lost sight of in the general design.

It is generally acknowledged by experienced engineers that the ratio of tons of refrigeration per 1,000 occupants must be about 70. Of course this will vary somewhat with different theaters, but not as much as might be supposed, and the reason for this is self-evident from the fact that the large proportion of heat to be picked up is generated by the people themselves and the large part of the refrigeration load obtained through dehumidifying is produced either by the incoming air (which varies approximately with the seating capacity) or by the audience, which also comes back to the number of occupants. From this it readily may be appreciated that the possible variation of shape or in building materials can affect but slightly the ratio of tons of refrigeration per 1,000 occupants. Generally the walls and roof account for only about 10 per cent of the refrigeration tonnage.

But with this self-evident fact on the table it is discouraging to note theater cooling systems being designed on ratios as low as 50 tons per M., or almost 30 per cent inadequate. Having gone through the agony and pain and expense of experiments and having positively determined within very close limits the size of plant and ratios which should be used, there are those who would scrap the data so painstakingly secured and who, arbitrarily and solely on the basis of cost, would perpetrate on the public theaters in which the cooling is not adequate to maintain comfortable temperature during the hottest summer weather. And if adequate cooling is not needed on the hottest days —well, just when is it required?

The fault of course lies primarily with the theater owners and operators, who, in many instances, are more desirous of having the advertising feature to flaunt in the face of the public that their houses are "equipped with refrigeration" than they are to see that their houses are properly cooled.

A contractor who knowingly takes a theater job fully understanding that the cooling is insufficient, is also open to censure. He certainly is obligated to call the owner's attention to the fact that, although he is spending quite a little money on cooling, he is liable to be disappointed in the results during real hot weather, whereas, by spending just a little more, he can be assured that his house will be able to hold its 70 degrees F. or 75 degrees F., practically regardless of the outside temperatures.

The engineer, however, is the most inexcusable, as he—perhaps better than anyone else—is fully aware of just what is required and also just what the plant will do long before it is ever installed. He it is who should not spinelessly acquiesce in cuts and reductions proposed to unsophisticated owners by unscrupulous contractors. He it is to whom the general public looks for comfort and pleasurable temperatures.

Let the theater engineer show himself as being steadfast in his stand for proper cooling and proper temperatures, and as realizing his duty to the theater-going public at large so that the same question will not arise in a few years as has been brought up in school work. It is fortunate that here, indeed, is one class of building which even the open window enthusiasts have avoided.

A Never Failing Guaranteed Valve

The operation of the Cadwell No. 10 is simple. The moment steam comes into contact with the thermostatic float, instantaneous expanding of the diaphragm lifts the float and valve pin into seat, closing valve. This quick action is what gives efficiency.

The Cadwell No. 10 is also manufactured with ⅛" or ¼" bottom outlets for quick vents. It is fully guaranteed for five years.

Get it from your jobber.

The BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

CADWELL

No. 10 NON-ADJUSTABLE AIR VALVE

Ask your jobber also about
SIMPLEX FLUSH VALVES
PERFECTION FLOOR & CEILING PLATES

QUESTIONS

ASKED BY READERS AND ANSWERED BY EXPERTS

TWO HOOK-UPS OF HOT WATER SUPPLY SYSTEMS

Editor, "Domestic Engineering":—Herewith you will find two sketches of hot water supply systems, drawn for the purpose of ascertaining which is the best hook-up covering the following points:

1.—Which will give the greatest quantity of hot water?

2.—Which will give the best results using small quantities?

3.—Which will recover the fastest?

4.—Which will probably have the highest gas bills, taking same amount of gas out, under both conditions?

5.—What, in your opinion, is the best hook-up?

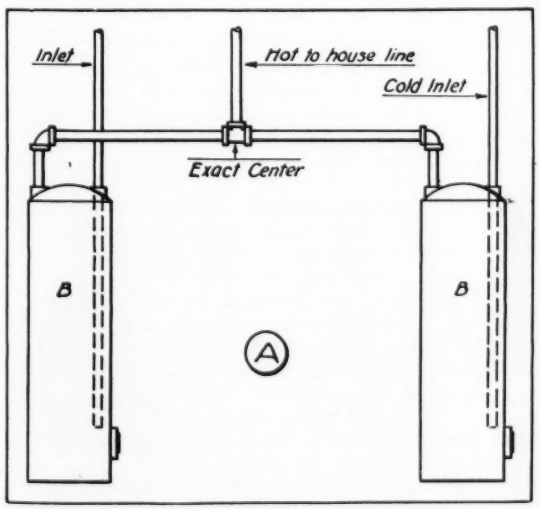
The same material is used in both cases: Two automatic gas water heaters of equal capacity, and equal in every other way.

Pennsylvania. O. N. A.

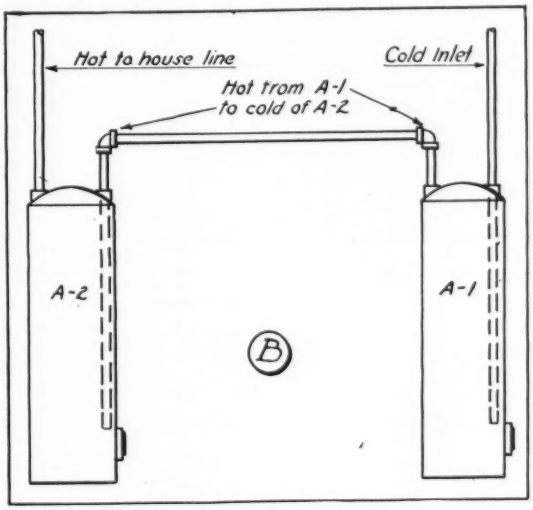
The nature of your questions is such that it is almost impossible to answer them properly without having first made set-ups, in accordance with your plans, and having carefully checked the results of the heaters in operation.

In our experience, we have not been called upon to make installations, in accordance with either plan, but have used larger heaters when larger quantities of hot water were needed.

Furthermore, it is our experience that heaters of this type operate on a very close schedule, that is, the thermostatic action is prompt in both shutting off the gas burner and in turning it on again, therefore we feel justified in answering your questions in the following manner, basing the replies on the installation and use of heaters, not connected tandem as per drawing A, nor in series as per drawing B, but with heaters installed in single units drawing supply direct from city mains or installed with a tempering tank (heated by a coil in the firepot of the heating boiler), which makes the connection somewhat like Drawing B.



1.—We believe that quantities will be equal, because heaters will remain active until water of proper temperature reaches thermostat at which time they will shut off



with a click. In A, heaters would shut off at the same time, and in B, heater 2 should shut off before heater 1.

2.—Results should be nearly the same.

3.—Little if any difference.

4.—Should be about the same.

5.—Prefer installation as per drawing A.

We have found that a similar heater, with a 30-gallon tank connected to a coil in the firepot of the heater for a tempering tank (that is "cold" supply to heater is really the hot water from the tempering tank) operates just about in accord with the drawing of hot water, almost as soon as any water is drawn, the heater goes into action and closes very soon after faucet is closed. This applies in average weather. When weather is extremely cold and there is a heavy fire in the heater, there is an over-supply of hot water, and the gas heater does not operate as quickly as it does under warm or mild weather conditions.

John Cuneo, Chattanooga, Tenn., has just completed the plumbing and heating installation in the Cherokee Hotel, Cleveland, Tenn. He has also been awarded the heating contract on the Read apartments, with a bid of $11,500; the plumbing and heating contract on the Southern Bell Telephone building, with a bid of $22,500; the plumbing and heating on the First Baptist Church for $15,000.

Due to the liquidation of the firm of Mawe & Cole, master plumbers of Union City, N. J., William J. Mawe has entered business under his own name, a recent announcement states. Mr. Mawe has opened a shop at 954 Broadway, Union City.

RETAIL ADVERTISING SERVICE

$4.20 for twelve weeks' service. We send new cut each week. You take copy from this page.

Consistency in advertising is the first requirement for success. A great many retailers commence to advertise and then stop, frequently because they find that it requires time and effort to prepare ads in time for publication. This page is to serve those men—each week we send a new illustration cut, and a reprint of this page.

Series No. 23 *All you have to do is hand them to your local paper, indicating which of the ads you want to use. Only $4.20 for twelve week's service.*

Hasty Breakfasts
—what causes them

IT ISN'T alone late rising. Analysis will show that in most homes there aren't sufficient bathroom facilities to give each one time for the morning bath—without which no day should be started—and leave time for a leisurely breakfast. Two solutions are possible: Either a shower, which means quick, convenient bathing, or an extra bathroom. We'll be glad to talk over the problem with you.

(In this space your Name, Telephone Number and Address)

THE news columns of your paper are as valuable to you as the advertising columns. Use them. Clip out the item below and hand it to your local paper.

HURRIED BREAKFASTS CAUSE INDIGESTION

Too many men, says Harry Brown, local plumbing and heating contractor, invite indigestion by hurried breakfasts.

"It isn't late rising alone," said Mr. Brown. "But in most homes there is insufficient bathroom equipment to enable every member of the family to start the day right with a bath, and leave time for a leisurely breakfast. Those two things will prepare one to face the most difficult of days.

"An extra bathroom in the home will give each member of the family a chance to start the day right, with just a few minutes to sit and chat at the breakfast table before separating for the day."

Bath or Breakfast?

THAT is the choice in too many homes where one bathroom must serve several members in the morning. Someone has to forego the morning bath—essential to an efficient day—or forego the leisurely few minutes at the breakfast table which can contribute so much to the sense of well-being in facing the day's work. Let us talk over the possibilities of an extra bathroom with you.

(In this space your Name, Telephone and Address)

SEND this letter to a list of prospects whose homes do not have the extra bathroom required in modern homes. Your girl can get the letters out in her spare time.

HARRY BROWN
PLUMBING & HEATING

Two Rivers, N. Y.
July 21, 1928.

Mrs. Edward Jones,
Two Rivers, N. Y.

Dear Madam:

Doubtless you have been worried by seeing the members of your family who leave for office or school in the morning, eating a hurried breakfast with one eye on the clock. You know it isn't the way to start the day properly.

Have you ever analyzed the cause of those hurried breakfasts? Doesn't it lie in the fact that one bathroom will not suffice for a busy family in the morning. The best way to start the day is with a morning bath—but if more than one must be at office or school at nearly the same time, and there is only one bathroom, that is impossible.

We suggest, therefore, the extra bathroom. It will mean that the family can sit down together to breakfast—gather at the table if only for a few minutes, before they leave for the day's duties.

A small space—only five feet square—is sufficient to accommodate a regulation bathroom. And the cost is moderate. Besides, from the standpoint of realty values, the house with only one bathroom is at a disadvantage.

Very truly yours,
HARRY BROWN

Clark Building, Pittsburgh, Pa.

* * *

Architects and Engineers, Hoffman-Henon Co., Philadelphia, Pa.; Heating Contractors, George H. Soffel Co., Pittsburgh, Pa.

Fig. 325 Jenkins Standard Iron Body Gate Valve, Screwed

THROUGHOUT the plumbing and heating systems of the new twenty-five story Clark Building, Pittsburgh, Jenkins Valves have been used. Included in this installation are Iron Body Globe and Gate Valves, and Bronze Gate Valves.

During the past 64 years, Jenkins Valves have been installed in thousands of fine business buildings. Their creditable performance over this long period is largely due to the fact that Jenkins Valves have always been made for the maximum service, not merely the average.

JENKINS BROS.

80 White Street, New York, N. Y. 133 North Seventh Street, Philadelphia, Pa.
524 Atlantic Avenue, Boston, Mass. 646 Washington Boulevard, Chicago, Ill.
JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Canada

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

LEAD PIPE

Flexible~

The Flexibility of lead pipe is one of its biggest advantages. This flexibility is due directly to the metal which is four times as soft as gold.

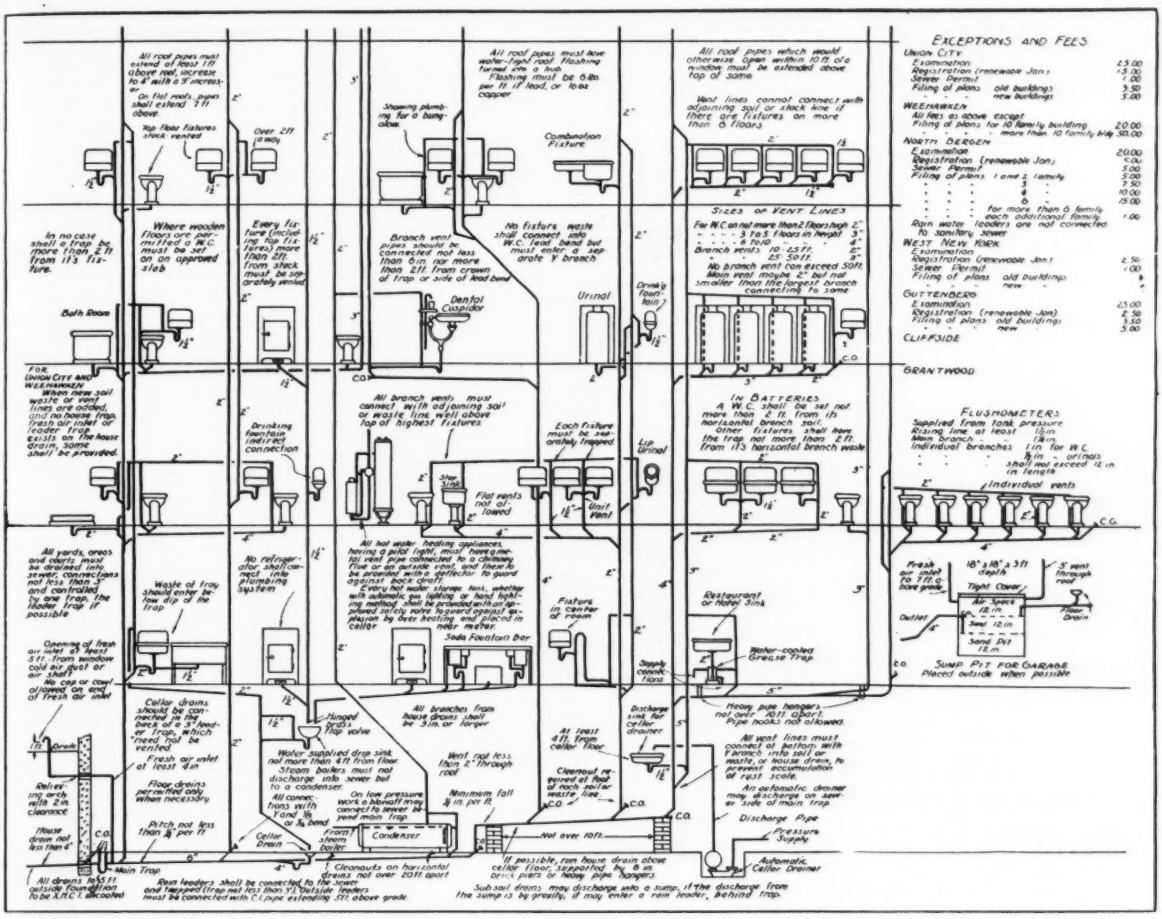
The flexibility of lead pipe overcomes many problems met within pipe lines. It is easier to handle, easier to install, withstands freezing, shapes itself when buildings settle and lasts forever.

Use Lead Pipe!

NATIONAL LEAD COMPANY

National Lead Co. (Principal Office) 111 Broadway, N. Y. C.
Georgia Lead Co. Atlanta, Ga.
National Lead Co. (Jas. Robertson Lead Works) Baltimore, Md.
Chadwick-Boston Lead Co. Boston, Mass.
National Lead Co. Buffalo, N. Y.
E. W. Blatchford Co. Chicago, Ill.
National Lead Co. (Raymond Lead Works) Chicago, Ill.
National Lead Co. Cincinnati, Ohio
National Lead Co. Gibson & Price Co. Cleveland, Ohio
Lawrence Shot & Lead Co. Omaha, Neb.
John T. Lewis & Bros. Co. (Tatham Bros. Works) Philadelphia, Pa.
National Lead & Oil Co. of Pa. Pittsburgh, Pa.
National Lead Co. St. Louis, Mo.
National Lead Co. (Northwestern Works) St. Paul, Minn.
Hoyt Metal Co., Ltd. of Canada Toronto, Canada

LEAD
THE
EVERLASTING
METAL
THAT ONLY
A PLUMBER
CAN INSTALL


EXCEPTIONS AND FEES
UNION CITY
Examination £5.00
Registration (renewable Jan.) 15.00
Sewer Permit 1.00
Filing of plans old buildings 3.50
new buildings 5.00
WEEHAWKEN
All fees as above except
Filing of plans for 10 family building 20.00
more than 10 family, May 30.00
NORTH BERGEN
Examination 20.00
Registration (renewable Jan.) 1.00
Sewer Permit 5.00
Filing of plans 1 and 2 family 5.00
3 " 7.50
4 " 10.00
5 " 15.00
for more than 5 family each additional family 1.00
Rain water leaders are not connected to sanitary sewer
WEST NEW YORK
Examination
Registration (renewable Jan.) £ 50
Sewer Permit 1.00
Filing of plans old buildings
new
GUTTENBERG
Examination £5.00
Registration (renewable Jan) 2.50
Filing of plans old buildings 3.50
new 5.00
CLIFFSIDE
GRANTWOOD
SIZES OF VENT LINES
FLUSHOMETERS
Supplied from tank pressure
Rising line at least 1½ in.
Main branch " 1¼ in.
Individual branches 1 in. for W.C.
¾ in. urinals
shall not exceed 12 in. in length
Individual vents
SUMP PIT FOR GARAGE
Placed outside when possible
IN BATTERIES
Branch vents
Dental Cuspidor
Urinal
Drinking fountain
Bath Room
Shower
Flat vents not allowed
Unit Vent
Lip Urinal
Restaurant or Hotel Sink
Soda Fountain Bar
Water-cooled Grease Trap
Fixture in cellar or room
Discharge sink for cellar drainer
Condenser
Cellar Drain
Main Trap
Pressure Supply
Automatic Cellar Drainer
Outlet
Floor Drain
Sand Pit
Tight Cover
Air Space
Grade
Relieving arch with 2 m. clearance
House drain not less than 4"
Pitch not less than ¼" per ft.
Minimum fall ¼ in. per ft.
Not over 10 ft.
Cleanouts on horizontal drains not over 20 ft. apart
Waste oil tray should enter below dip of the trap.
Opening of fresh air inlet at least 5 ft. from window
Fresh air inlet at least 4 in.
Floor drains permitted only when necessary
Vent not less than 2" through roof
Hinged brass trap valve
Water supplied drip sink not more than 4 ft. from floor
Steam boilers must not discharge into sewer but to a condenser.
All connections with Y and ⅛ or ¼ bend
On low pressure work a bowl if may connect to sewer beyond main trap
Cellar drains should be connected as far back of a 3" feeder trap, which need not be vented
All branches from house drains shall be 3 in. or larger
At least 4 ft. from cellar floor
Cleanout required at foot of each soil or waste line
All vent lines must connect at bottom with Y branch into soil or waste, or house drain, to prevent accumulation of rust scale.
An automatic drainer may discharge on sewer side main trap
Discharge Pipe
Heavy pipe hangers not over 10 ft. apart. Pipe hooks not allowed.
If possible, run house drain above cellar floor, supported by 8 in. brick piers or heavy pipe hangers
Sub soil drains may discharge into a sump, if the discharge from the sump is by gravity, it may enter a rain leader, behind trap.
All drains below ft. outside foundation to be X.H.C.I. glazed
Rain leaders shall be connected to the sewer and trapped (Trap not less than 1½ Outside leaders must be connected with C.I. pipe extending 5 ft. above grade.
All roof pipes must extend at least 1 ft. above roof, increase to 4" with a 3" increaser.
On flat roofs pipes shall extend 2 ft. above.
Top floor fixtures stack vented
Over 2 ft. to way
Showering plumbing for 6 bathing alcoves.
All roof pipes must have waterproof roof flashing turned into a hub. Flashing must be 6 lbs. per ft. if lead, or 16 oz. copper
Combination Fixture
All roof pipes which would otherwise open within 10 ft. of a window must be extended above top of same
Vent lines cannot connect with adjoining soil or stack line if there are fixtures on more than 6 floors.
Where wooden floors are permitted a W.C. must be set on an approved slab
Every fixture (including flat fixtures) more than 6 ft. from stack must be separately vented
In no case shall a trap be more than 2 ft. from 1½ fixture.
No fixture waste shall connect into W.C. roof bend but must enter a separate Y branch
Branch vent pipes should be connected not less than 6 in. nor more than 2 ft. from crown of trap or side of lead bend
All branch vents must connect with adjoining soil or waste line 6 in. above top of highest fixtures
Each fixture must be separately trapped
Drinking fountain indirect connection
No refrigerator shall connect into plumbing system
All hot water heating appliances, having a pilot light, must have vertical vent pipe connected to a chimney flue or air outside roof, and these to be provided with a deflector to guard against back draft
Every hot water storage tank, whether with automatic gas lighting or hand lighting method, shall be provided with an approved safety valve to guard against explosion by over heating, and placed in boiler room.
All yards, areas and courts must be drained into sewer, connections not less than 3" and controlled by one trap, the leader trap if possible
In no case shall a trap be more than 2 ft. from 1½ fixture.
When new soil waste or vent lines are added, and no house trap, fresh air inlet or leader trap exists on the house drain, same shall be provided.
FOR UNION CITY AND WEEHAWKEN
In a battery A W.C. shall be set not more than 2 ft. from 1½ horizontal branch soil. Other fixtures shall have the trap not more than 2 ft. from 1½ horizontal branch waste
Fresh air inlet to 5 ft. of boiler grate
18" x 18" x 3 ft. depth
5" vent through roof
12 in.
12 in.
12 in.

Pilot Drawings *for a Group of Towns*

By R. M. STARBUCK, JR.

THERE is a saying that "There is nothing new under the sun." Certainly this is not true concerning plumbing affairs. The pilot drawing is one of those things that is new—that is, to most of us.

In the past we have shown in "Domestic Engineering" several pilot drawings for cities of different size, but now we are showing in an accompanying illustration, a drawing of this kind covering the plumbing regulations of a group of neighboring towns.

In this case the group is made up of the towns of Union City, Weehawken, North Bergen, West New York, Guttenberg, Cliffside and Grantwood, in New Jersey.

It is seldom that so many separate towns can be combined under the same pilot drawing, but in many instances, if the differences in plumbing practice are not too great, this can be done, and we have often seen such a plan successfully carried out.

It all depends upon the similarity of the plumbing laws in the several towns. If these laws are practically the same, as in this instance, there is but little difficulty.

Even though there is quite a bit of difference between the practice of the different towns, still it is often possible to make a single pilot drawing that will cover the entire group in a satisfactory manner.

Different cities and different groups of towns will employ the pilot drawing for different purposes. In the case of the drawing which we are now showing, it was desired to have it show the various fees demanded by each town, a requirement which was very easily met. This is something that is quite often found desirable for the pilot drawing to show. It may be well to again define the pilot drawing and explain some of its features.

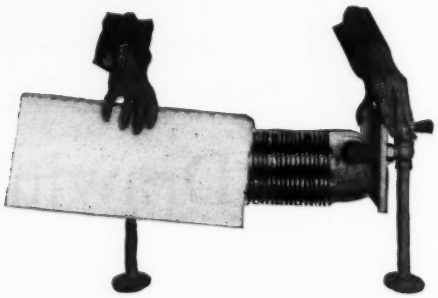
A pilot drawing is a complete picture of the plumbing code of a city or town. It gives in the form of a picture, the information that appears in the municipal or state plumbing code in printed form. Those that we are most familiar with are about 22 in. by 28 in. in size.

To be of real value, such a drawing should be corrected and added to until it has been brought to the point where it truthfully illustrates plumbing practice just as it is enforced under the plumbing department of the city to which it applies. When it has been brought to this point, it is an excellent thing to attach to it the signature of the proper official. This gives it added authority. In nearly all cities and towns there are certain features of practice which the printed code does not show, either through omission or because they have come into use after the printing of the code. The pilot drawing should show

ROBRAS 20-20

Give Satisfaction

By INSTALLING



These ROBRAS 20-20 BATHROOM UNITS

SO MANY of your customers are remodeling, building or installing additional bathrooms. They are on the look-out for the best, and most modern equipment. This out-of-the-way radiator is bound to please them.

Do you know this Bathroom Unit?

It's constructed to fit in any-where.

It comes complete with a famous Robras 20-20 Radiator section, and lacquer metal enclosure.

The enclosure can be slid on or off in any direction to facilitate installation.

These Bathroom Units come in six sizes—rated from five and a half to twenty-one square feet.

Their dimensions vary from three and a quarter by eighteen, to five and a half by twenty-two and a half inches.

They are all eight inches high.

If you have not already received our Data Sheet on the entire Robras 20-20 line of radiators, we will send it together with other material, on receipt of your name.

ROME BRASS RADIATOR
CORPORATION
ONE EAST FORTY-SECOND STREET . . . NEW YORK CITY

every practice and method that is being enforced, even though not to be found in the printed code. When used as it should be, a pilot drawing should benefit every branch of the plumbing trade. The plumbing department of the city or town should make constant use of it in the interpretation of the plumbing ordinances to contractors, workmen, architects, and any others desiring correct information. The plumbing contractor should find it invaluable in demonstrating to customers and to his workmen, and the workmen should use it whenever any question arises which it will answer. The apprentice could do nothing that would more greatly benefit him than to study the pilot drawing of the city in which he works. Little is to be gained by elaborating on the pilot drawing which we are showing, for from its very nature, it speaks for itself. Those who wish further information about pilot drawings are invited to send their questions to "Domestic Engineering."

Legal Questionnaire

Answered by "The Judge"*

Master Plumber Cannot Recover Back from City Fee Paid for a Permit

Editor "Domestic Engineering":—I would like to get some information regarding whether I can recover back money paid for a permit to install plumbing. I agreed with an owner to install plumbing in his house and I got a permit at the city hall to do the job. The permit cost me ten dollars. I took my tools to the job and started work. A misunderstanding arose between me and the owner which caused me to give up the job. Now, am I not entitled to get back my money which I paid for the permit? Have they got a legal right to keep it?

California. L. O.

Answer:—Unless your state legislature has enacted a statute covering the subject recently, which has not come to my knowledge, there would not seem to be any chance for you to get your ten dollars back, for your courts have held that a voluntary payment for a permit or license cannot be recovered from the city.

Perhaps you have heard of what probably was a famous case in your own state, back in 1898, before the year 1919, when a man named Rooney had a saloon and restaurant out on the end of Oakland Pier. The licensing authorities claimed that Rooney must pay a liquor license fee of $1,000 and he did so, under protest. Later it was discovered that Rooney's saloon, out on the end of the pier, was not within the then city limits of Oakland, which ended at the ship channel. Rooney had influence with the city council and persuaded that body to pass an ordinance refunding him the $1,000 which he had paid. The city auditor, however, held up payment of the money, and Rooney went to court in an attempt to force the city auditor to honor the order of the city council. Your Supreme court said that Rooney should have known what the city limits were, as they were a matter of statutory law, and then went on to rule as follows:

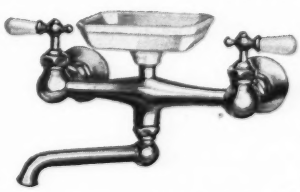
"The payment of the license by Rooney, although it was stated in the ordinance to have been under protest, was, nevertheless voluntary on his part, and as such cannot be recovered back."

The Court cited the rule that to be able to recover back money paid to a city, there must have been some

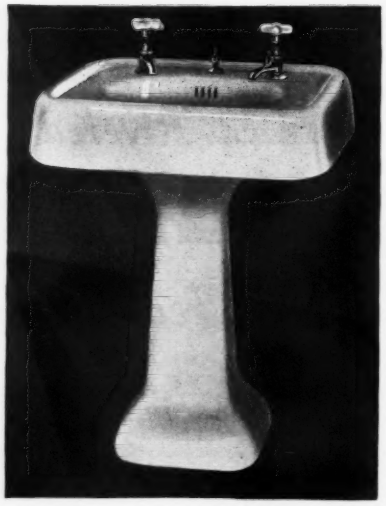
*Every effort is made to the end that these answers may be authoritative. However, we cannot assume any responsibility because of the very nature of the service, which is rendered without a personal interview.—Editor.

KEWANEE
STEEL Riveted
BOILERS
for Lower Heating Costs
KEWANEE BOILER CORPORATION
Kewanee, Illinois

A SIGN OF THE TIMES
When you see the Ohio Brass trade mark you may know the product so marked is of the first quality.
Plumbing and Heating contractors are accepting O-B Valves as standard because they never fall down on the job.
Ask your Wholesalesman, He knows!
OHIO BRASS COMPANY
741V Mansfield, Ohio

The NEW "ILLINOIS" SWING SPOUT SINK FAUCET

is good looking and well made. Low in price but not cheap. Also made for three waters.
Our new catalogue "G" shows many new items. Write for a copy.
WOLFF CO.
"SUPERIOR PLUMBING FIXTURES"
CHICAGO

IT PAYS TO BUY GOOD TOOLS
For Lower Threading Costs
Buy the New No. 11 or 11A Beaver. The biggest improvement in die stocks in 20 years. All leading jobbers carry them in stock.
THE BORDEN COMPANY
510 Dana Ave., Warren, Ohio
BEAVER
TIME and LABOR SAVING TOOLS



Can You Show Your Customers Such BEAUTY As This?

Glistening snow-white surfaces . . . graceful lines . . . artistic proportions . . . these are the features of Rundle ware that attract buyers at first glance and build volume sales. Rundle ware reflects the advanced ideas in enameled ware design—backed by highest quality and up-to-date features. Accurate fitting insures dealer maximum installation profit.

Write for beautifully illustrated booklet that tells all about the Rundle line and explains why it builds more business for you.

Rundle Mfg. Co.
Milwaukee, Wis.

RUNDLE
PLUMBERS' SANITARY ENAMELED WARE
BRASS AND IRON GOODS

The Mark that Has Won the Confidence of Buyers

coercion or compulsion or some exercise of authority over the person or property of the party making the payment which controls his action and which can be avoided only by making payment. The court went on to say:

"The payment of the license tax by the appellant (Rooney) was voluntarily made under the supposition, doubtless, that his place of business was within the City of Oakland. But, because that turns out not to be so, the character of the payment is not altered. In law it is still deemed to be a voluntary payment, and the city is not responsible in the matter, nor required to refund the money so paid."

Fourteen years later your Supreme court cited the above Oakland case with approval, in deciding a case involving a similar voluntary payment, this time of taxes to a city.

As you probably know, most states have passed statutes giving tax payers the right to recover back taxes illegally or improperly assessed to them and paid by them. This takes care of the repayment of taxes. As far as I know no statute has ever been enacted in California permitting the recovery of license fees voluntarily paid.

As you state in your question, your permit was at least a slightly used permit, which would make it all the more unreasonable as a matter of law to permit you to recover your ten dollars.

A permit or license, is merely a personal privilege to do certain things. Whether you used yours or not is immaterial, as a matter of law. I think that you will probably agree that if it were possible to return an unused permit and recover back the fee paid, a largely increased clerical and inspecting force would have to be employed by the city to take care of such cases.

Rights of Contractors Against School District When Work on School Building Is Stopped for Lack of Funds

Editor, "Domestic Engineering":—I should be pleased to have your legal department give me advice on the following, pertaining to state hospital work. The architect asks for bids not later than 12 o'clock noon to be opened at 10 o'clock the day following. If bid is submitted 12 minutes later than 12 o'clock, is it legal for the architect to refuse to open and read the bid which is late?

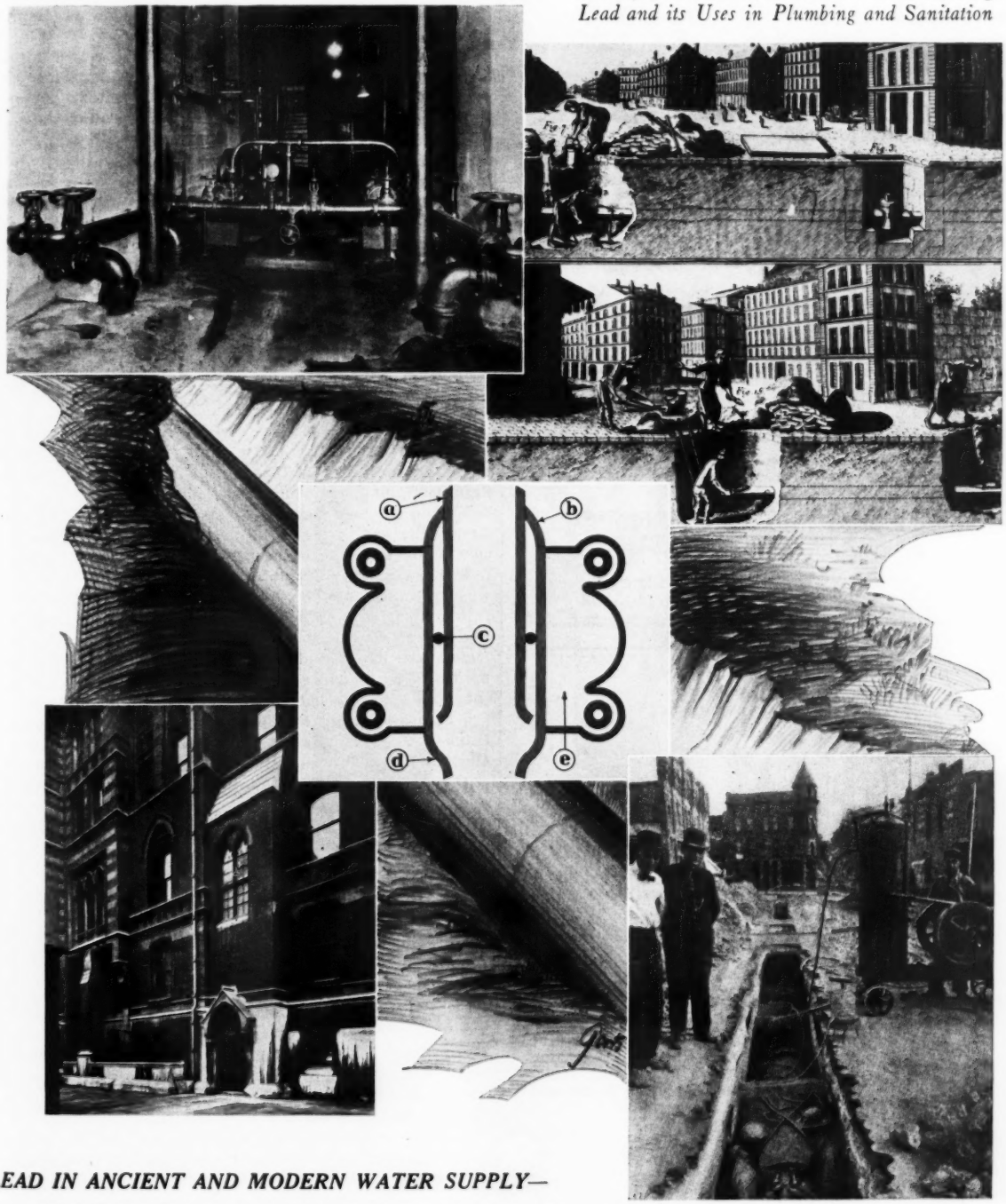
Also, public school job contract was awarded in April, 1924. The school district valuation having been cut during progress of the building construction and the school district thus being unable to meet the obligations, the officials informed the contractors that they could not pay and that the contractors should cease work. The contractors complied with this request. The work is still unfinished. I should like to have some advice as to whether it is proper to leave the work standing in the present condition or to finish it and sue the school district? The specifications give the contractor the right to collect legal rate of interest. Also, on this job there was a time limit set with a penalty attached for non-completion by January, 1925.

Pennsylvania. R. C. N.

Answering your first question, there would not seem to be much question but that a bidder submitting a bid at 12 minutes after the hour set will find himself in much the same position as the man who arrives at a railroad station 12 minutes after his train has pulled out. There isn't much he can do except wait for the next train. I am answering this question purely upon the facts which you have presented and without any further knowledge of the wording of the invitation to bidders. Those who issue invitations to bidders can usually impose any reasonable terms with which bidders must comply if they are to establish any rights in their favor by their bid. It is the

LEAD — ITS STORY AND ITS USES

No. 14 in a Series of Picture Stories Describing Lead and its Uses in Plumbing and Sanitation



LEAD IN ANCIENT AND MODERN WATER SUPPLY—

The pictures at the upper left, upper right and lower right provide a striking contrast. At the upper left is a water works filtration plant showing the installation of lead lined pipe, lead lined valves, pumps and fittings. At the upper right are shown ancient methods of water supply witn the plumbers of those days repairing lead pipe laid under the streets. At the lower right is shown the application of modern methods and modern labor saving machinery. Here the cast iron water main is being calked with lead wool driven home by air hammers. The use of the pneumatic hammer for calking joints in cast iron pipe is receiving much attention from engineers and contractors.

The pictures at the center and at the lower left relate to rain water supply or disposal. The center picture is a diagrammatic drawing of a bracket for the rain leader shown at the lower left which is on the building of the Royal Courts of Justice, London.

The KAINER PRESSURE GOVERNOR

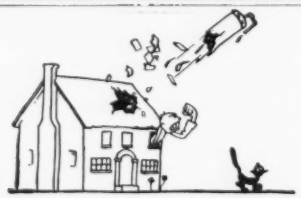
Sensitive—
as the Blacksmith's Bellows

The *Bellows Diaphragm*—an exclusive feature of the KAINER PRESSURE GOVERNOR is extremely sensitive, responding instantly to the slightest changes in pressure. As shown above, it is used in both the pressure reducing and relief units.

The KAINER PRESSURE GOVERNOR is safe, simple, economical and a *profit producer for you.*

Write us for descriptive circular

KAINER & COMPANY
CHICAGO
761-763 Mather Street
Manufacturers of Plumbing and Heating Specialties

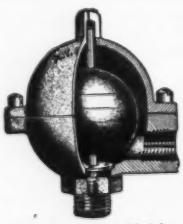


When a boiler kicks over the traces

When a boiler kicks over the traces and leaves home without permission via the roof, there's nothing much to do about it but pick up the pieces of wreckage—and make sure it doesn't happen again.

The best way of preventing the second time (and the first time, too) is by equipping the hot water supply system with a Model No. 1 Red Top Relief Valve.

This valve can be set to automatically relieve at 50, 75, 100 and 130 lbs. Its action, based on the law of gravity is simple and so reliable that the valve bears the official approval of the Underwriters' Laboratories, Inc., America's foremost testing organization and also of State and Municipal Boards of Water and Boiler Inspection.



Sectional view, Model No. 1 for domestic hot water supply systems.

Send for folder, describing Model No. 1, and Model No. 2 for hot water heating systems.

Neptune Meter Company
50 E. 42nd St. New York City, N. Y.
Branch Offices in Principal Cities

Red Top Relief Valves

usual practice, in asking for bids, to set a time limit for receiving bids, and, in fairness to other bidders, it is necessary to set a strict limit. If a leeway of 12 minutes is allowed, it would be reasonable to argue for a delay of 12 hours—and 12 hours might give the tardy bidder a distinct advantage, for a new price list might appear within that time which would give the tardy bidder a distinct advantage over his competitors.

Your second question involves a situation which is perhaps as difficult to solve, without a detailed knowledge of all the facts, as any which might be presented. Actions and claims against a government agency are almost always based on very technical rights. In the first place, unless a statute has been passed giving the right, a state or one of its departments, cannot be sued without its consent. However, unless your statutes have been changed since the latest statutes which have come to my notice, the contractors you mention have the right to sue the school district.

Claims against a state or one of its departments involve many matters which make the validity of a claim very uncertain. For instance, you see bond issues of municipalities advertised for sale, and in the advertisement you will usually see a statement that a firm of well-known lawyers, specializing in that field, have given it as their opinion that the bonds have been legally issued.

Not many years ago I knew of a case where a contractor installed a viaduct for a city at an expense of thousands of dollars, only to find that his contract, according to the Supreme Court, was of no value to him because the proper votes had not been passed and the proper officials had not signed the contract. As far as I have ever heard, that contractor lost out entirely.

In most cases, if a public official enters into a contract without observing all the necessary legal technicalities, the municipality as such is not liable for his contract. Usually such matters are straightened out by appropriate legislation, but that does not alter the fact that the municipality may have a right to refuse to pay the contractors and keep the benefit of their labor and materials.

I do not mention these phases of the situation because I think that your situation falls within their scope, but to show you that I cannot give you very definite information without a knowledge of all the facts. My advice to you and the other contractors is to join in seeking the advice of a competent attorney who will handle all of your claims at a minimum expense to the entire group of contractors.

I believe that I am safe in saying, however, that you have a valid claim against the school district for breach of your contracts. I should not advise completion of the work by the contractors, for the reason that your rights have been established by the fact that the school district has broken its contract and ordered you not to continue with it. I assume that that is what you mean when you say that the contractors were informed to cease work. Even if you had not had specific orders to stop work, you could undoubtedly prove a breach of the contract on the part of the school district officials because of their inability to make payments under the contract.

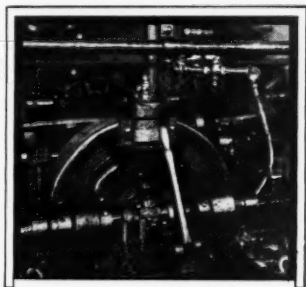
Unless the contract and specifications provide that the school district may stop work at any time without liability for breach of the contract, or some other such provisions are in the contract, I should say that you and the other contractors would have the right to recover damages for the work which you had performed under the contract and, in addition, to recover the profit which you would have made if the contract had been carried through to completion. This view of the case would eliminate the necessity of your putting more good money into the work with the consequent possibility of further loss because of so doing.

ACCURACY *and Interchangeability*

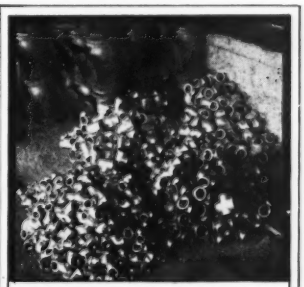
Accuracy according to the American Standard makes all Stockham Cast Iron and Malleable screwed fittings interchangeable in pipe lines erected according to American Standard. Accuracy in every detail of manufacture produces Stockham Fittings of fine appearance, with strength far in excess of probable strain, soundness, smooth inner surfaces, chamfered faces and *perfect threads that save time and money on any job.*

Stockham working patterns are accurately made from master patterns of American Standard

Accuracy in Stockham Fittings insures perfect line-up of pipe fabricated at the shop



Accurate set-up of rigid precision machines assures accuracy of tapping



Accuracy of inspection insures the uniform high quality of all Stockham Fittings

Working gauges for checking threads are constantly checked against master gauges

Ask your jobber for Stockham Fittings. His stocks of Stockham Fittings and of all the materials you need are maintained for your best service. The jobber serves you with the greatest economy and speed. Send for our vest-pocket catalog of fittings.

STOCKHAM PIPE & FITTINGS CO.
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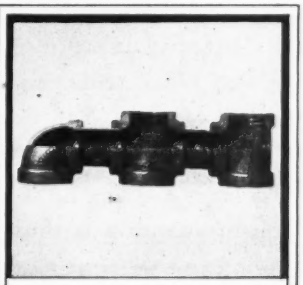


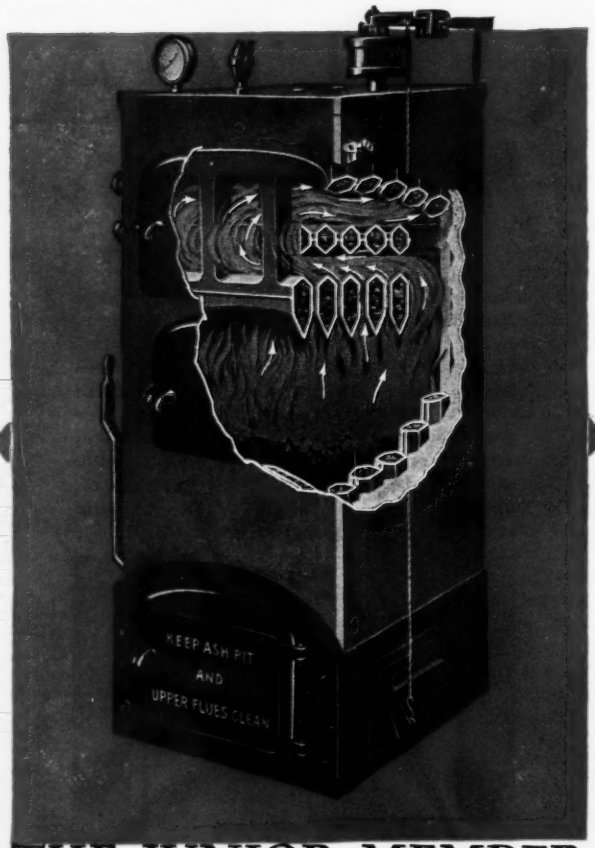
Accuracy of patterns makes the interchangeability of Stockham Fittings always possible

CAST IRON
Screwed *Flanged* *Drainage*

MALLEABLE
Standard *Extra Heavy*
Oil Country Malleable

ELECTRIC CAST STEEL
Flanged *Screwed*

STOCKHAM FITTINGS



The NATIONAL JACKETED BOILER

This Boiler has a trim, durable, dust-defying empire green jacket, that houses a dependable, efficient boiler. It burns hard or soft coal, coke, oil, or gas. It is furnished for either steam, vapor, or hot water systems. Handsome and effective.

THE JUNIOR MEMBER OF A LARGE FAMILY

OUTSTANDING POINTS

Attractive—Durable empire green enamel finish, black trim.

Insulated—A thick layer of rock wool between jacket and boiler.

Efficient—The double set of three flue-ways provides a long forward and back fire travel.

Convenient—Exceptionally deep fire box permits heavy fueling; requires infrequent attention.

Dependable—Its heating qualities have been demonstrated on many and varied installations.

Time-Saving—Large doors make firing and cleaning easy.

Adaptable—Efficiently burns hard or soft coal, coke, oil, or gas.

Versatile—For use on steam, hot water, or vapor systems.

The National Jacketed Boiler is the junior member of a large and highly regarded family. With its snappy, durable empire green finish and glossy black trimmings, it is up-to-the minute in appearance. And it has the National family traits of quality, dependability, and effectiveness.

Its large fire box holds a heavy fuel charge; frequent attention is thus made unnecessary, and combustion efficiency is boosted. Fire travel is long, so the gases can give up their heat. A heavy layer of rock wool insulation cuts heat losses. Large doors make firing the boiler, and cleaning flues and ash pit simple, easy tasks.

The National Jacketed Boiler wins admiration by its appearance, earns respect by its performance. It's all you expect of a National Product.

NATIONAL RADIATOR CORPORATION

Manufacturer of Radiators and Boilers

Ten Plants devoted to National Service through these Branch Offices and Warehouses:

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Buffalo, N. Y.—259-265 Delaware Avenue New York, N. Y.—55 W. 42nd St.
Chicago, Ill.—2445 N. Keeler Avenue Cleveland, Ohio—935 E. 63rd Street Omaha, Neb.—108-112 S. Tenth St. Philadelphia, Pa.—121 N. Broad St.
Cincinnati, Ohio—Spring Grove and Elmira Avenue Pittsburgh, Pa.—1509 Arrott Building
Indianapolis, Ind.—431 W. Georgia St. Johnstown, Pa.—221 Central Ave. Richmond, Va.—3032 Norfolk St. St. Louis, Mo.—1042 Central Industrial Ave.
Washington, D. C.—2205 Fifth Street, N. E.

AERO NATIONAL JACKETED BOILER NATIONAL PRODUCTS

Ventilation in the Light of British Scientific Research

(Continued from Page 37)

are taken, and the composition of the expired air determined. It is thus possible to determine respiratory changes, and to calculate that part of the heat production of the body. In a tropical climate, or resting during a fast, the heat output of the body amounts to about 1,600 calories, but in such exercise as swimming it may be increased to about ten or fifteen times as much or even more.

Children in an open-air sanatorium, even when resting in splints, have a metabolism above ordinary children. The metabolism varies from 40 to 100 per cent. It is very important to increase the metabolism by open-air exercise and exposure in order to keep the body fires burning brightly.

One method of ventilation is to blow air from a fan so as to keep it in circulation round the head. With a cool head and warm feet, we get good conditions of the respiratory passages of the nose. If the feet are cold and the head warm, these passages become blocked up.

Smoke pollution affects respiratory diseases and increases the death-rate due to them.

During the delivery of a very instructive lecture on this subject, Professor Hill directed attention to statistical evidence that had been received from Washington, U. S. A., to the effect that, in that city, the absence of students from school, owing to catarrh, was six times higher in schools that had mechanical ventilation, than was the case in other schools which had open window ventilation only. Professor Hill also pointed out that open window ventilation is excellent in those buildings in which it can be made to serve effectively without the causation of objectionable and harmful draughts, and it cannot be denied that draughts of cold air are indeed harmful.

But the size of many modern buildings makes satisfactory ventilation by open windows difficult, and in a great number of instances impossible, consequently it has become necessary to bring mechanical ventilation into service. It has to be admitted, however, that many mechanical ventilating installations have failed to give the high degree of satisfaction that had been expected of them. The ventilating engineer has pointed out the failure, and the remedy that must be applied. Failure results because the volume of conditioned air that is passed through the various rooms, etc., is insufficient to prevent heat stagnation around the human body. The temperature and the humidity of the conditioned air may also be at fault. To remedy the defects just mentioned, the supply of air must be sufficient in volume, and properly conditioned. Not only can mechanical ventilation be made to give results that are perfectly satisfactory in every way, but it is the only method by means of which it is possible to achieve adequate and satisfactory air change in many modern buildings. Unfortunately the matter does not rest with the consulting engineer alone, and it is impossible for him to give perfectly satisfactory results unless his clients are prepared to meet whatever reasonable expense is necessary.

The Otto Schulz Plumbing and Heating Co. has been incorporated in Portland, Ore. Members of the company are given as Otto Schulz, Arthur Feldman and Ruth Schulz. Otto Schulz has been carrying on a successful plumbing business as a private concern for many years at 747 Northrup street, and the incorporation is in line with further progress and development.

The Hotstream
HEATS IN A HURRY
TRADE MARK REG.
WATER-HEATER

KEROSENE HEATERS—
WICK BURNER TYPE

Quadruple coils of copper and the patented Kerogas Burner (Hotstream is the only Water Heater licensed to use it) insure the greatest efficiency.

Lights instantly at the touch of a match—is noiseless, sootless and extremely economical.

Made in 3 sizes—write for complete information.

THE HOTSTREAM HEATER COMPANY
9502 Richmond Rd. "Makers of Heaters that Heat" Cleveland, Ohio

One thing

you can be sure of . . . the name Speakman is the only guarantee you need of the finest possible quality. Install Speakman equipment and you can be dead sure of pleasing your customer . . . and of making a fair, worth-while profit.

SPEAKMAN SHOWERS
and FIXTURES

YOUR FITTING PROBLEM
IS SOLVED *when you say*
"SQUARE GEE'S"

SQUARE Pipe

"GEE" Fittings
DRAINAGE, BRASS

MALLEABLE CAST IRON

THE CRABLER MANUFACTURING CO.,
and its subsidiary CRABLER-REPUBLIC, Inc.
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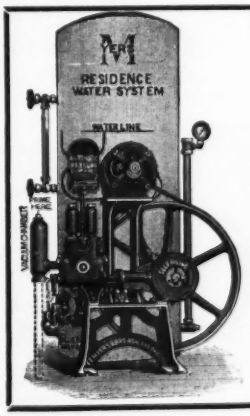

MYERS ELECTRIC
HOUSE PUMPS
For Home or Farm

A complete unit ready to be connected up with water and power lines. Equipment includes pump, motor, tank, automatic switch, gauges, valves and fittings. Operation any electrical current—city service and farm lighting and power systems. Most important—safe, silent, sure and dependable. An acknowledged leader in water circles and one that always gives satisfaction. Other water systems of equal merit for hand or power operation make up the MYERS LINE—A postal brings catalog and information.

THE F. E. MYERS & BRO. CO.
Ashland, Ohio
Ashland Pump and Hay Tool Works

Popular

A SHORT time ago, radio was used almost exclusively by navigators and commercial telegraph companies, as a means of radiographic communication. Today there is scarcely a home in the land that does not have a radio receiving set.

The popular demand for Sloan Royal Flush Valves has also grown by leaps and bounds. For years they have been the established flushing equipment in the bathrooms and toilets of hotels, public buildings and other large institutions. Now their popularity has extended everywhere. Today, thousands of homes, large and small, throughout the country, are equipped with Sloan Royal Flush Valves.

ROYAL FLUSH VALVES

SLOAN VALVE COMPANY

CHICAGO

Albany, N. Y.	Buffalo, N. Y.	Denver, Colo.	Greensboro, N. C.	Milwaukee, Wis.		
Atlanta, Ga.	Butte, Mont.	Des Moines Iowa	Indianapolis, Ind.	Minneapolis, Minn.	Oklahoma City, Okla.	Seattle, Wash.
Baltimore, Md.	Cincinnati, Ohio	Detroit, Mich.	Kansas City, Mo.	Nashville, Tenn.	Philadelphia, Pa.	St. Louis, Mo.
Birmingham, Ala.	Cleveland, Ohio	Durham, Conn.	Los Angeles, Cal.	Newark, N. J.	Pittsburgh, Pa.	Syracuse, N. Y.
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		Grand Rapids, Mich.	Miami, Fla.	New York City, N. Y.	San Francisco, Cal.	Washington, D. C

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

Rate of Construction Favors Business

Building activity, which is at a high rate, is the basis for a steady current demand and for prospects of substantial future volume in plumbing and heating business in the reports received this week from the various jobbing centers. No price changes were announced by manufacturers in the staple lines of plumbing and heating and no delays were reported in getting shipments through to buyers. The market in general reflects an increasing rate of operations by contractors which, in turn, is passed quickly, in the shape of orders, through the wholesaler back to the manufacturer. Wholesale inventories are scaled to meet only current demand from the trade, as a rule, and buying, therefore, is frequent and in small lots.

June construction contracts broke all previous June records, according to F. W. Dodge Corporation, amounting to $650,466,200. *This figure is 3 per cent ahead of that of June, 1927, and carries the six-month total to* $3,444,867,500—*the largest first six-months' total on record for any year. Indications of activity in plumbing and heating are found in the latest government releases on porcelain plumbing fixtures, showing June shipments to be the largest for any month so far this year. Similar releases on gas-fired boilers show a sale of* $161,926 *in April and* $162,167 *in May of this year—records not yet going beyond this latter month.*

NEW YORK

Building Permits Augur Good Business—

Spurred by the thousands who are seeking homes within the confines of New York's five boroughs, metropolitan builders, from January 1 to July 1, filed 1,550 plans for 2,342 tenements, which will contain 204,885 rooms and will cost $274,287,850. This figure, according to the commissioner of the tenement house department, exceeds the amount involved in plans filed during the same period last year by approximately $104,000,000, and is thus an increase of over 60 per cent in this one type of construction, a type that furnishes a maximum amount of business for the plumbing and heating contractor. Actual production figures for the first half of the year showed a decline, however, with 1,665 buildings costing approximately 116 millions, as compared with 1,955, which cost over 122 millions, during the same period in 1927.

It is also interesting to note the situation in Westchester county, where the authorized new construction in 19 cities, having a total population of 390,000, was $9,036,372 in June, a figure exceeded by only five cities in the country, each of whom has more than a million inhabitants. The permits granted showed a gain over June, 1927, of 16.28 per cent, the star city being White Plains, the county seat, which issued $1,338,475 in permits, as compared with $3,724 last year.

Contractors and wholesalers, interviewed about the plumbing and heating business, have varying reports to offer. Most of them show a loss in volume over the first half of 1927, but find that current business is good. The chief wholesale exceptions to this statement are one that serves New Jersey territory and one that does the bulk of its business in Westchester, both of these firms having increased their last year's figures. Practically all of those questioned find demand at the present time far superior to that in effect a short time ago. Manufacturers have not changed prices, and delivery conditions are also unchanged.

Soil Pipe

There is little wholesale buying of this commodity, this apparently being traceable to two conditions. The first is that many wholesalers built up fairly good stocks before the recent firming of the market, and the second is that many distributors apparently decline to anticipate future needs until they are positive of price conditions. The call from the contractor is fair, and results in the moving of an appreciable quantity of goods. Prices have not been changed since our last report. The average foundry does not delay shipments to any considerable extent.

Pipe—Brass, Steel and Wrought Iron

Makers of brass pipe are doing only a fair business, the result of an apparent lull in the demand upon the wholesaler. Demand for steel pipe has picked up considerably over what it was during June and is now characterized as "fair" by mills. The movement of wrought iron pipe is said to be a little lighter than it was a few weeks ago, but it is still not out of the ordinary for the season. One mill finds its six months' shipments into New York territory approximate last year's. Strength is still shown in quotations from makers of all three items. Deliveries of brass pipe depend upon the selling company. Prompt shipments can be made of the other types.

Enameled Ware

Demand is said to have been increased very slightly since our last report, but current business is still not heavy. However, there are a great many releases against previously placed orders, and the shipments of ware into this market total a good many pieces. One of the larger manufacturers finds his shipments into New York were greater during the first half of the year than in 1927, but others report a slight falling off in volume. Prices generally have not been changed during the week. There are few shipments delays reported.

Pottery

Big jobs are becoming more frequent, and these are keeping salesmen who call on architects busy in an at-

tempt to get their ware specified. Few of these have reached the stage where there is any actual delivery of goods, but orders are now being placed for later delivery. The demand for pottery for use in the better grade of residences and apartments continues to be very good. Both manufacturers' and wholesalers' quotations show firmness. Delivery conditions are excellent, the average pottery having ample stocks.

Plumbers' Brass Goods

The advancing copper market has the effect of making quotations to the wholesale trade show firmness and distributors, in turn, are tightening up in their estimates to the master plumber. This is particularly true of tubular goods. Demand for both types of brass is fairly good, but some manufacturers find that wholesalers' calls for releases vary, spottiness being shown. Distributors say that contractors are using a good amount of brass. The usual source has at least a fair stock on hand, and instances of delayed deliveries are not common.

Range Boilers

While the price reduction made by one manufacturer on July 2, which was followed by others a few days later, was 12½ per cent lower than the March sheet, the actual reduction to wholesalers was only approximately 7½ per cent, as there were very few range boilers sold at the March figures, the average maker using the November, 1927, sheet as his basis for quotations. Demand following the reduction is light, due at least in part to the smaller number of operation houses now being built. Quick shipments can be made by most makers.

Boilers and Radiators

Business is coming in to manufacturers at a fairly good rate, they report, the bulk of this being releases against contracts placed previous to the May and June price increases. Business compares favorably with that of July last year, makers state. Prices quoted to the wholesalers are apparently rather firm, with wholesale quotations showing less steadiness than manufacturers'. Few delays in deliveries are reported.

Fittings

The average manufacturer finds little fault with the condition of the fittings demand at the moment, when he considers the business placed before the June price changes. The greater percentage of manufacturers are said to be holding firmly on the price bases they have established.

CENTRAL WEST

Construction Awards High—

The week's review of trading in the central western district places most of the emphasis on the fact that plumbing and heating materials are now moving rather steadily. While the year thus far suffers generally in comparison with the tonnages that moved into consumption during the first six months of 1927, yet a fact established and substantiated by many manufacturers and wholesalers in this territory is that each succeeding month this year has shown betterment over the preceding one. Much of the new business for the week consisted of comparatively small lot orders, as buyers taken collectively are not looking ahead to any great extent. Rather, they are making engagements for their immediate and near future requirements only. Some of the larger contractors claim that business for them is off considerably at present in comparison to what it was a year ago. They use, as a means of arriving at this conclusion, the number of mechanics they are now employing and the number on their pay-rolls last July at this time.

A bright spot surrounding the potential future market is seen in the construction report of the F. W. Dodge Corp., which points out that the June total for building contracts awarded in the central west territory amounted to $192,700,300, which is a drop of but 1 per cent over the figures for May, 1928, and the record of June, 1927. These figures have greater significance when it is pointed out that Chicago proper is not enjoying quite as broad a construction program embracing the hotel and office building projects that have characterized this particular area for the past several years.

Manufacturers as a whole are, when given a fair amount of notice, able to ship practically all of the major commodities satisfactorily. No price change by manufacturers to wholesalers in the form of new discount sheets was noted during the seven-day period covered by this report.

Soil Pipe

The total tonnage of soil pipe that is being disposed of in this area is good, but there is no semblance of evenness in its division among the leading producers. The fact that there is a 2½-point difference in the base prices quoted by foundries is, perhaps, accountable for this fact. Little or nothing is heard of delivery extensions. No further price changes were announced by makers since the report of a week ago.

Pipe—Steel and Wrought Iron

The past few months apparently have shown a slight increase in tonnage every 30 days and tonnages for July thus far seem in a fair way to continue on this basis. Contractors' requirements have been slowly mounting, although little change was reported in consumption for the past weekly period. Both steel and wrought iron pipe are referred to in about an equal degree. Mills have indicated no change in prices on either commodity. Forwardments are made within a satisfactory length of time.

Fittings

While the volume of business so far this year is said by some manufacturers to be somewhat below the shipments during the like period of last year, they report that during the past week or ten days the tendency has been toward betterment. Most jobbers are said to be well stocked, but there are instances where business is being placed with some manufacturers for malleable and cast iron fittings at the new prices. Factories are in a position to deliver promptly. Makers announced no change in prices.

Enameled Ware

Those jobbers who still have enameled ware booked with manufacturers are releasing in a way that is generally satisfactory. This old business is rapidly being cleaned up and many wholesalers are placing fresh business as their trade with its demand, which is rising, makes inroads on their stocks. Factories are having little if any difficulty in forwarding orders promptly. Manufacturers have made no announcement of change in prices.

Pottery

While it is understood that there is about as much pottery moving into consumption now as there was a year ago, reports from the offices of potters differ somewhat as to individual company volumes. Several are to be found who are selling less staples now than at this time in 1927 and others contend their sales are greater. Complaints of any delivery delays are by no means general. Manufacturers have made no change in their sheet prices to jobbers.

Plumbers' Brass Goods

Summarized, the reports obtained from representatives of manufacturers of both tubular and cast brass items amount to, "Business is good and, while it may not total as much thus far as it did a year ago, some of the loss that has been suffered earlier is being made up by the

present increased volume. Some factories are pressed to keep shipments abreast of the releases and new short notice rush orders that are sent in by jobbers. Satisfaction is expressed with the steadiness of prices, which remain unchanged where manufacturers are concerned.

Range Boilers

Interest in range boilers, where master plumbers are concerned, is not particularly keen. Some jobbers bought a little more freely during the week, but in most cases only for short range requirements. No further price changes were reported by manufacturers. Shipments that are satisfactory are obtainable.

Boilers and Radiators

With their volumes running a little ahead of last year in the central west area, a number of boiler and radiator manufacturers report that at present their incoming business is about equal to their present shipments. The needs of heating contractors are slowly broadening. Manufacturers are in good production and their stocks are adequate to insure prompt shipments. Factory quotations to jobbers in the way of new sheets have not been disturbed.

MIDDLE ATLANTIC

Medium Priced Home Building Picking Up—

Building in the Middle Atlantic section so far this year has not been up to the standard set during the boom period following the war, although without doubt it would compare very favorably with the pre-war average. However, at the present moment there seems to be a revival of one of the classes of construction of most value to the plumbing and heating contractor, the dwelling selling from $4,500 to $8,000. Permits during the past few months have shown that some of these houses were to be built, and some of the wholesalers say now that they are getting inquiries from master plumbers and heating contractors for quotations on material for a fair number of them.

One of the larger wholesalers is able to report a fairly good number of sales, as many and as large as any month of this year, and some of the distributors also say that prices are on a firmer basis than they were at the beginning of the year. The latter condition is partially balanced by reports that one or two of the fairly important factors in the wholesale market are quoting figures that do not give them the spread between cost and selling price that will yield a fair profit. Predictions are freely made that the last half of the year will see more plumbing and heating business done in the Middle Atlantic district, especially in the northern part, than was secured up to the first of July.

Prices generally have not been changed since our last week's report, with varying degrees of firmness as different products are considered. Delivery conditions are excellent, with most producers of items covered by this report able to ship early enough to satisfy most customers.

Soil Pipe

There is a lack of steady demand, caused partially by the fact that some producers allowed their customers to cover at earlier prices. Other distributors, with only fair stocks on hand, are buying only enough pipe to care for customers' requirements. Foundries can ship the average order with almost no delay. Prices from sources have not changed.

Pipe—Brass, Steel and Wrought Iron

Demand for brass pipe has changed little, the call from the wholesaler being very good, while the distributor in turn is delivering a good quantity to the contractor. Steel pipe demand does not have the snap to it that some of the mills would like to see, but a fair amount is being shipped. Wrought iron business has not changed a great deal, spottiness being shown, with one district being good one week and another picking up the succeeding seven days. Prices from producers on all types are unchanged, with the same firmness that has been a characteristic for some time. Resale prices on brass pipe are said to lack strength. Deliveries of steel and wrought iron pipe can be made quickly, but some delays are reported by at least one producer of brass.

Pottery

One of the larger potteries finds that there is enough school business opening up to give this company a fair amount of the type of ware used in this kind of construction. The fair demand enjoyed by most makers seems to be well divided between staples and specials, some ware going to wholesale stocks, which in general are not large. The price tone, both to distributor and installer, seems to be firm. Staple items are ordinarily shipped at the time desired by customers.

Enameled Ware

One company which has been reporting a brisk shipment of ware into the section around Philadelphia for the past several weeks now finds that the demand has fallen off a trifle and that wholesalers are not specifying shipments against contracts as rapidly as they were. Other makers find little change in current demand, this being normal for mid-July. Prices from makers appear strong on practically all types, and wholesale quotations reflect this trend. Manufacturers have built up inventories to a point where staples can be shipped with little or no delay.

Plumbers' Brass Goods

Cast brass manufacturers find that current business is comparatively light, and that there are very few orders for future deliveries being placed. A great deal of the cast goods contracted for has now been shipped, and shipments are therefore not heavy. There is a fair localized demand for tubular products, and, due to the fact that wholesale inventories are rather light, master plumbers' needs are quickly felt by manufacturers. Wholesale stocks of cast goods are fairly good, but many wholesalers will soon have to get into the market, it is stated. The price tone of both types is strong, with a strong copper market a feature.

Range Boilers

Although the price decreases made by some manufacturers on small boilers early in July figure 12½ per cent when contrasted with March sheets, the actual decline is only about 7½ from the best prices most manufacturers have gotten this year, as practically all sales were on the basis of the November, 1927, sheet, which was 5 per cent lower than the March, 1928, quotations. Current business is slack.

Boilers and Radiators

Most manufacturers are staying closely to sheets when quoting prices. Some makers report a decided improvement in demand during the past week, with wholesalers and heating contractors both asking for immediate shipment of boilers and radiators on order, and some entering the market with new business. The average source does not have to ask customers to wait for shipments.

Fittings

Quotations on all types of fittings are said to be firm on established discount bases to wholesalers. The middlemen are quoted as adopting much the same attitude in the pricings they make to the trade. Demand is normal for the season, with considerable shipping being done. Few complaints of shipment delays are heard.

NEW ENGLAND

Contractors' Requirements Broaden—

The majority of wholesalers have experienced during the past week a continuance of the improved demand on the part of plumbing and heating contractors which has obtained since the early part of June. Activities in most sections of New England have reached the point where master plumbers are well engaged, both in the execution of present contracts and in figuring work which will require their attention within the coming two or three weeks. Projected building is of good volume, which fact is substantiated by a number of architects whose proposals are being turned out in comparatively large numbers. Together with the steadily increasing development of residential work, there is noted the commencement of many major operations.

The Stock Market

Quotations furnished by Frazier Jelke & Co., Chicago

Par Value	1928 High	1928 Low	Quotations of July 14, 1928	*	Bid	Asked	Last
25	152¾	130½	American Radiator Co., com	A	139	139½	139
100	147½	142¼	American Radiator Co., pfd	A	144½	145	144½
50	74⅞	53¾	Anaconda Copper Mining Co	A	66⅛	66⅜	66⅜
NP	49	27½	Brunswick-Balke-Collender Co	A	41	41¼	41⅜
NP	117½	90½	A. M. Byers Co., com	A & F	92	92¼	92⅛
100	114½	111½	A. M. Byers Co., pfd	A & F	112	113	112
100	140	130	Century Electric Co., com	G	130	135	132
100	106	101	Century Electric Co., pfd	G	102	104	102
50	6	4	Chicago Nipple Mfg. Co., "A"	B	2½	3½	3
50	3	2	Chicago Nipple Mfg. Co., "B"	B	1½	2	2
25	47½	45	Crane Company, com	C	45	46	45⅜
100	121¼	118¾	Crane Company, pfd	C	121	122	121¼
100	94	91	Detroit Brass & Malleable Works	D	92	94	92
100	110	105	The John Douglas Co., pfd	I	105	108	105
20	23	17	Eagle-Picher Lead Co	I	16	18	17
NP	50	32½	Fairbanks, Morse & Co., com	A	40¾	41¼	41
100	111½	104	Fairbanks, Morse & Co., pfd	A	106½	107	106¾
NP	134	96¼	Johns-Manville Corp	B	109½	110	109¾
100	160	150	Jones & Laughlin, com	F	155	....	155
100	123	120	Jones & Laughlin, pfd	F	120½	121⅛	120¾
10	21	20	Michigan Copper & Brass Co	D	19	21	20
NP	45	30	Minneapolis-Honeywell Regulator Co	B	35¾	36¼	36
NP	38½	31½	Modine Mfg. Co	C	36¼	36¾	36½
NP	42	32	F. E. Myers & Bro. Co	H	36	36½	36
100	136	116	National Lead Co., com	A	115½	116½	116
100	147¼	139	National Lead Co., pfd	A	144	144½	144¼
NP	40⅝	17½	National Radiator Corp	B	18¼	18¾	18½
100	108	104	Ohio Brass Co., pfd	H	107	109	108
NP	100	88¾	Ohio Brass Co., B"	H	89½	90½	90
100	101	100	Penberthy Injector Co., pfd	D	100	101	100
25	26	3	Pierce, B. & P. Mfg. Corp., com	U	4	8	5
100	95	20	Pierce, B. & P. Mfg. Corp., pfd	U	25	50	30
NP	27	18¼	Richmond Radiator Co., com	B	18	19	18¼
NP	40⅛	36	Richmond Radiator Co., pfd	B	37½	38½	38
100	53	40	Seovill Mfg. Co	U	51	54	52
NP	42¼	33¼	Standard San. Mfg. Co., com	A & F	38⅝	39	38⅝
100	125	115	Standard San. Mfg. Co., pfd	A & F	116	118	116
100	55	45	Trenton Potteries Co., com	U	45	55	45
100	95	95	Trenton Potteries Co., pfd	U	95	105	95
100	300	190½	U. S. Cast Iron P. & F. Co., com	A	248	248½	248
100	137	115	U. S. Cast Iron P. & F. Co., pfd	A	125	127	125
NP	46	38	U. S. Radiator Corp., com	D	38	40	38
100	106	102	U. S. Radiator Corp., pfd	D	102	105	102
100	61¼	27	U. S. Rubber Co., com	A	30	31	30⅜
100	109⅛	55	U. S. Rubber Co., pfd	A	58½	59½	59
100	154	132⅜	U. S. Steel Corp., com	A	135¾	136¼	136
100	147¼	138⅝	U. S. Steel Corp., pfd	A	141¼	141¾	141½
NP	19	15	Walworth Company	A	15½	16½	16
NP	10	6	Williams Oil-O-Matic Htg. Corp	C	8	8¼	8
NP	106⅞	83⅛	Youngstown Sheet & Tube Co	A	86	86¼	86⅛

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Boston Stock Exchange
F—Pittsburgh Stock Exchange
G—St. Louis Stock Exchange
H—Cleveland Stock Exchange
I—Cincinnati Stock Exchange
U—Unlisted Stocks

The Metal Market

	July 17	Average June, 1928	Average Apr., 1928	Average 1927
PIG IRON—				
No. 2 foundry, Chicago, Furnace	$17.50	$18.00	$18.50	$19.66
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.85c	1.85c	1.85c	1.83c
Blue annealed sheets, No. 10, Pittsburgh, per lb.	2.00c	2.00c	2.05c	2.20c
Black sheets, No. 24, Pittsburgh, per lb.	2.60c	2.70c	2.75c	2.91c
TIN—				
Straits tin	46½c			
LEAD—				
Chicago	6.10c			

The Old Metal Market

Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	18 c	Copper, light	10 c
Block tin	42¼c	Copper, uncrucibled wire	11¾c
Brass, light	6¼c	Faucets and valves	9 c
Brass, heavy mixed	7½c	Lead, heavy	5.50c
Brass, red	9¾c	Solder joints	9 c
Copper, crucible	12 c		

NOTE: Prices are those quoted on Tuesday of this week.

The volume of jobbers' and makers' orders, from a monetary standpoint, shows considerable improvement over the past several weeks. The former are not heavily anticipating their future needs, but are being largely governed by the trend of their customers' wants. Prompt shipments on most all commodities are being accorded wholesalers and contractors.

Soil Pipe

No material change in the price, supply and demand situation of the soil pipe market has been noted during the week, either from jobbers' or makers' viewpoints. This commodity continues to be an item of main interest among plumbing contractors, and wholesalers have sufficiently equipped their warehouses to satisfy whatever increased demand might ensue. The majority of foundries report quite satisfactory sales. No delivery extensions are noted.

Pipe—Brass, Steel and Wrought Iron

Demand from wholesalers continues to reflect contractors' increasing needs for roughing installations. Mill shipments in all three classes have been substantial, according to representatives' reports. Steel and brass pipe stocks of jobbers are being kept at levels commensurate with plumbing contractors' increasing needs. Withdrawals of wrought iron pipe from local distributing points necessitate frequent replacements. Mills' shipping schedules are not interrupted. Both makers' and wholesalers' prices are unchanged.

Fittings

The past week brought about a better degree of activity in contractors' requirements, which is accounted for by the enlargement of newly commenced developments. Wholesalers are not ordering ahead, but are keeping sizeable stocks to care for the near future wants of their trade. Manufacturers are able to ship on short notice.

Enameled Ware

Weekly improvement in their shipments of enameled ware, both in "over the counter" lots and consignments to large operations, is reported by the majority of distributors in this territory. Makers, too, it is reported, are experiencing much larger volumes than they had received during previous months of the year. Ample stocks at factories make early deliveries possible. No price changes were announced either by manufacturers or wholesalers.

(Continued on Page 72)

Practical Problems—No. 46

Brazing and Soldering with the Gas Torch

THERE are many ways in which acetylene gas torches may be used in plumbing and heating. Many times a neat job of soldering or brazing can be done with this tool. The outfit consists of a cylinder of oxygen, a cylinder of acetylene, a regulator and gauges for oxygen, a regulator, gauges for acetylene, a blow pipe equipped with various heads to permit all sizes of welding, brazing or soldering operations, the necessary rubber tubing to connect the blow pipe to the two regulating valves and a pair of glasses to protect the eyes of the welder. This equipment is easily set up and simple to operate.

A soldering outfit as shown in the accompanying illustration, occupies a small amount of space in a shop and is a useful tool in the plumbing and heating shop. The forms of solder are lead-tin-antimony, cadmium-zinc and copper-zinc. There are various other solder alloys adaptable to various uses. Their melting range is between 300 and 1500 degrees F. In each case the percentages of the metals used in making up the solder alloys vary, with the result that these solders melt at a lower or higher temperature and with a corresponding decrease or increase of strength.

The approximate tensile strength of lead-tin-antimony solder is 4,000 pounds to the square inch, cadmium-zinc solder, is 15,000 pounds to the square inch and copper-zinc solder has a strength of 30,000 to 40,000 pounds to the square inch.

Their uses are based upon the principle that practically all metals will surface-alloy with another metal which melts at a higher temperature, provided the surface of the latter metal is chemically clean and heated to a point corresponding to the melting temperature of the solder used. In instances where the base metal is maintained in contact with the molten solder at this correct heat for a period of several minutes, the extent of the penetration of the solder into the base metal is remarkable.

William F. Bahn Called by Death

William F. Bahn, honorary member of Chicago Plumbing Contractors' Association, died at his home in Alhambra, Calif., on Thursday, June 28. Mr. Bahn was for many years a successful plumbing contractor in Chicago and an active member of the local master plumbers' association and of the Chicago North and Northwest Side Master Plumbers' Pleasure Club, until he retired from business and moved to California a few years ago. His burial took place at Montrose cemetery, Chicago, on Thursday, July 5. His wife, a son, a daughter, three sisters and two brothers survive him.

CLIMAX TEST PLUGS

Straight Double Plug

How can you be sure of your pipe tests? If you have asked yourself this question we can tell you that you will find your answer in Climax Test Plugs.

No matter what the pipe or what the test, Climax Plugs will do sure, dependable work. Write our engineering department about your problems. They can and know how to help you.

Climax Cellar Drainers for complete dependable drainage.

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Pacific Coast Agents: WM. P. HORN CO., 58 Federal St., San Francisco, Calif. 509 Wilcox Bldg., Los Angeles, Calif; L. C. Smith Bldg., Seattle, Wash.
Philadelphia, Pa.: DERBYSHIRE & MACK, 929 Real Estate Trust Bldg.
New York City: A. W. DRAKE, 66 West Broadway
New England Agent: ROBT. McKEOWN JR., 46 Cornhill, Boston, Mass.
JOHN W. STILES & SON, 700 Prospect-Fourth Bldg., Cleveland, Ohio
W. F. HARPER, 3733 Lindell Blvd., St. Louis, Mo.,
H. F. WILLIS, 520 Securities Bldg., Des Moines, Iowa.

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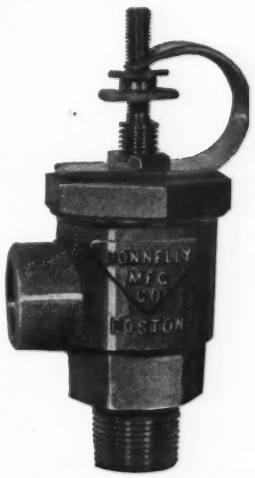
PRESSURE RELIEF VALVES

The outside spring on the Donnelly Pressure Relief Valve does away with the possibility of spring corrosion, with the subsequent loss of tension and adjustment.

This Donnelly Valve is designed especially for basement system tanks, range boilers, storage heaters and closed plumbing systems.

It operates automatically when pressure becomes too great. It is easily and speedily adjusted to any required pressure. Your jobber will be glad to sell you.



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Complete stock carried by
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JENNINGS Condensation Pumps receive the condensation from steam radiators, particularly radiators set below the boiler water-line level, and pump the condensation back to the boiler.

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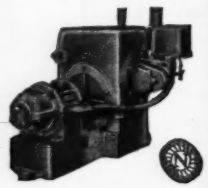

Motor-Driven Jennings Condensation Pump

Jennings Pumps

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DOMESTIC ENGINEERING
1900 PRAIRIE AVENUE " " CHICAGO

District Heating

(Continued from Page 26)

welded 3 overhead lines for 225-lb. pressure, one 6-inch of 2,500 ft., one 8-inch of 2,500 ft. and one 10-inch of 1,500 ft. Many welds on shorter lines of pipe in sizes up to 14-inch were also made. In 1925 the underground distribution system for the Lawn St. station, Rochester, was welded by the electric arc welding process, this system consisting of a 375-lb. pressure, a 25-lb. pressure and a return line. During the last 2 years the company has installed over 30,000 ft. of pipe in sizes from 20-inch down, equivalent to over 20 miles of 4-inch pipe. Only 2 leaks developed and these were due to defective work at the manholes because of confined working space.

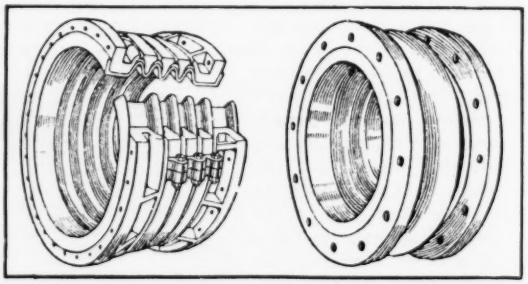


Fig. 13.—Seamless corrugated copper expansion joints

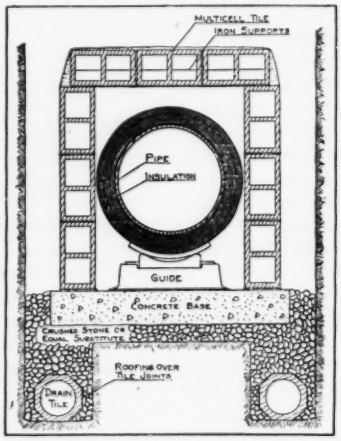


Fig. 14.—Cross section of tile conduit

The water-protecting and insulating features of steam mains are important in securing the highest possible heat transmission efficiencies. In a study of the insulating and water-proofing characteristics of underground steam piping at the University of Michigan, and as reported in the 1927 papers and reports of the National District Heating Association, the costs of the concrete box duct, the channel tile and the multicell tile are compared. However, each type of construction has special advantages for the construction for which it is most suited.

In order to secure a simplified and comprehensive table of the average heat losses per sq. ft. of pipe per hour for various steam pressures, also to indicate the relative efficiency of the three general

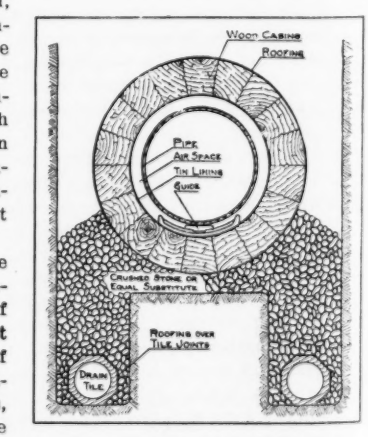
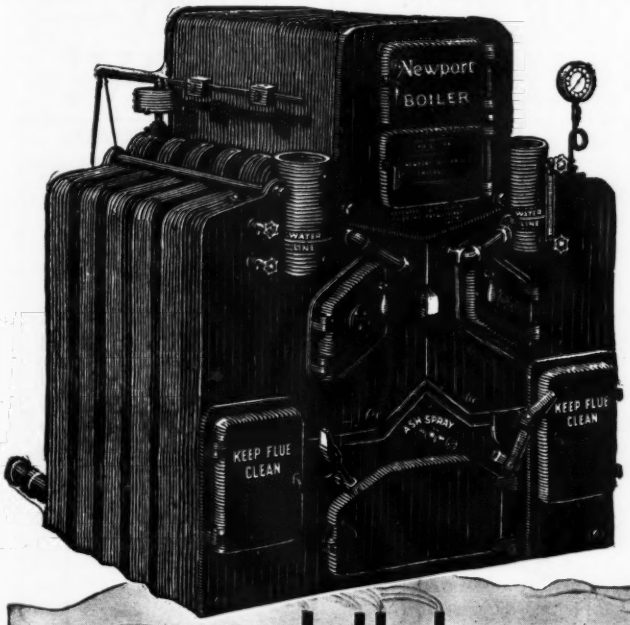


Fig. 15.—Cross section of wood casing conduit

Nowhere else can you find



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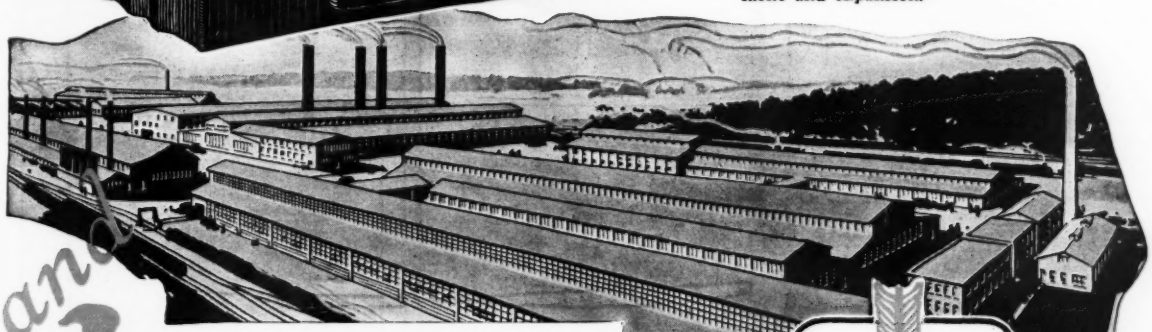

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3 A FEATURE THAT Puts You Above Competition

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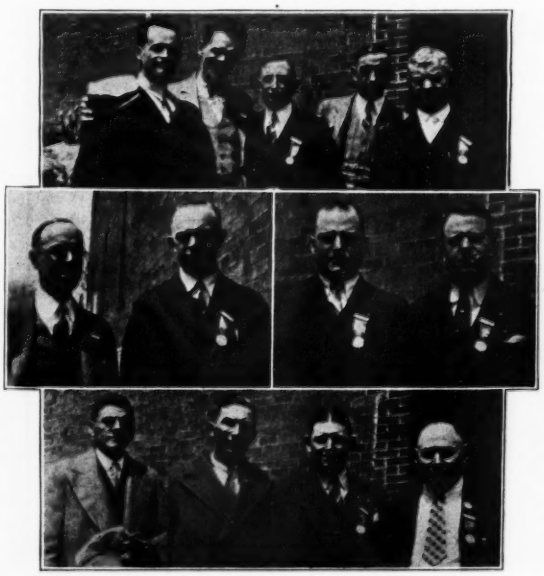
types of insulating materials, the various published data of several insulating products were checked, correlated and compiled into a table. There were three distinct groups of insulations, first the 85 per cent magnesia group; second the laminated asbestos, sponge felt and multiply group; and third the rock wool, and shredded rock group, as reported in the 1927 papers and reports of the National District Heating Association.

There are a number of efficiently designed and manufactured steam main systems on the market. Some of the specialists in the field handle practically everything from the heating plant exit to the heating element, including complete tunnel systems, expansion joints, manholes, radiators, valves and every other equipment necessary for the user. Concerns manufacturing and handling equipment for district heating systems are listed in "Domestic Engineering" Catalog Directory. The plumbing and heating contractor should study the facts on district heating presented in his trade paper and in books available.

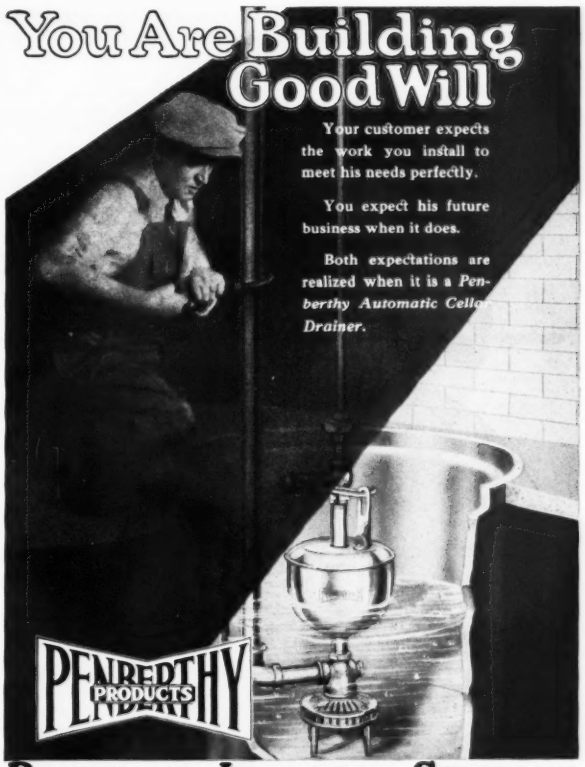
APPLYING THE BRASS TACKS

WHERE can the domestic engineer take greatest advantage of the business that can be secured from district heating systems? At the customer's end of the system, of course. And here is where his good knowledge of the entire district heating system becomes of special benefit. He knows the line from A to Z and thus knows just what must be done in designing, selecting and installing the steam or hot water heating equipment after the steam main has come to the side walk or to the foundation walls of the customer's building.

It is of little use to talk here about the heating systems and heating elements necessary for the district heating service. Most of this equipment is well known. However, if the reader wishes to know where certain devices are made, he should write to "Domestic Engineering."



Top row: E. F. Long of Harrisonburg, George Curry of Woodward-Wanger Co., Philadelphia; A. J. Thomas of Newport News; W. J. Lanahan of Newport News; J. J. Wynn of Lynchburg. Middle row: F. L. Doering, American Radiator Co., Lynchburg; W. L. Lacy of Charlottesville; P. D. Miller of Winchester; W. F. Wurzburg of Wolverine Brass Co., Norfolk. Bottom row: E. L. Hawkins of Blacksburg; C. H. Possin of Roanoke; L. W. Steele, Pierce, Butler & Pierce Mfg. Corp., Roanoke; R. E. Miller of Roanoke. Photos taken at annual convention of the Virginia Associated Plumbing and Heating Contractors, held at Salem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You expect his future business when it does.
Both expectations are realized when it is a Penberthy Automatic Cellar Drainer.
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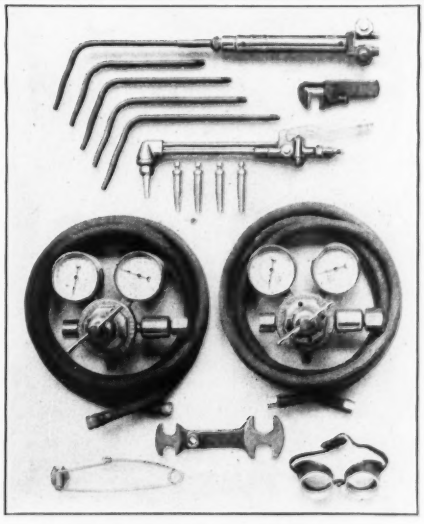

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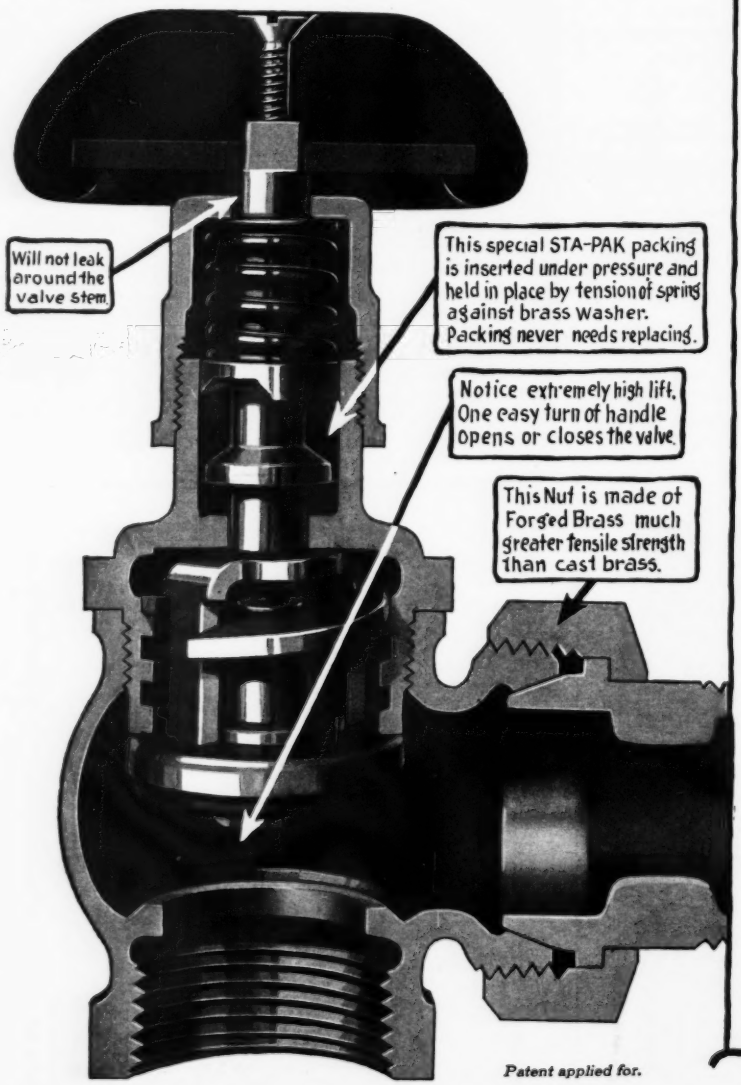
"Yes! Use STA-PAK Valves on those 'ONE-PIPE' Steam Jobs, too!"

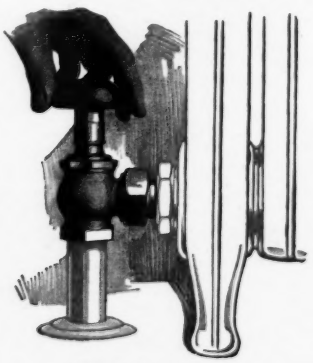

Will not leak around the valve stem.
This special STA-PAK packing is inserted under pressure and held in place by tension of spring against brass washer. Packing never needs replacing.
Notice extremely high lift. One easy turn of handle opens or closes the valve.
This Nut is made of Forged Brass much greater tensile strength than cast brass.

Patent applied for.

Two very important requirements of a valve for use on one pipe jobs are that it must not leak around the stem and it must have sufficient lift to allow for return of condensed steam.

STA-PAK VALVES
never need re-packing

Because of the special packing which is inserted under pressure, no packing replacement is ever required and this feature makes the Sta-Pak absolutely leak-proof. Furthermore, the lift of a Sta-Pak is two and one half times greater than actually required for one pipe jobs. The cost is but little more than charged for ordinary valves, while the customer satisfaction is incomparable—use Sta-Pak valves on one pipe work and on every other type of steam job.



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Sta-Pak valves assure customer satisfaction and allow you a liberal margin. Write for details.

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THIS WEEK

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

BOHN ALUMINUM & BRASS CORP. BUYS MICHIGAN SMELTING & REFINING CO.

The acquisition of the Michigan Smelting & Refining Co. of Detroit, Mich., by the Bohn Aluminum & Brass Corporation, also of Detroit, has been approved by stockholders of both companies. According to reports from financial circles, the Bohn company will issue $2,155,700 of fifteen-year 6 per cent debentures convertible at $100 par into Bohn common stock. These will be exchanged for 134,731 shares of Michigan Smelting no-par capital stock on a basis of 6¼ shares for $1,000 of Bohn debentures. The Michigan Smelting & Refining Co. has no preferred stock. There are $800,000 of Michigan Smelting & Refining Co.'s 5½ per cent bonds outstanding which will be called for redemption, the necessary funds being at hand.

ENTER PIPE AND FITTINGS FIELD

Fred J. Schill and George E. Burford, for many years associated with McMann & Taylor Co. of New York City, have formed a corporation under the name of Schill & Burford, Inc., with offices at 336-344 West 60th street, New York City. The new concern will deal in pipe, fittings and steam supplies.

K.-M. CO.'S BRANCH IN ST. PAUL IN NEW LOCATION

The Kellogg-Mackay Company of Chicago has moved its branch in St. Paul, Minn., from 142-144 East Third street to 253-259 East Fourth street.

NEW PLUMBING SPECIALTY MANUFACTURING CONCERN

The Fuller Manufacturing Co. of Mankato, Minn., has been organized to manufacture cast iron plumbing specialties and has started in business. The president of the new company is Frank W. Fuller, formerly associated with Crane Co. in St. Paul, and the general manager is Wm. O'Neill, Jr., formerly with the Blake Specialty Co. Mr. Fuller will direct the manufacture of the company's products and also cover Minnesota, Iowa, Nebraska and the Dakotas, while Mr. O'Neill will cover Illinois, Michigan, Wisconsin, Ohio, Indiana, Kentucky and Tennessee. The company's St. Paul, Minn., office is at 703 Pioneer building, and its Chicago office is located at 360 North Michigan avenue.

BUY THE AMERICAN SCHAEFFER & BUDENBERG CORPORATION

Manning, Maxwell & Moore, Inc., of New York City, has purchased the business of the American Schaeffer & Budenberg Corporation and will merge this business with the business of its subsidiary company, the Consolidated Ashcroft Hancock Company, Inc., which is owned exclusively by Manning, Maxwell & Moore, Inc. Consolidated Ashcroft Hancock Co. is the operating company and handles the manufacture and sales of the steam specialty business of Manning, Maxwell & Moore, Inc., and it also will in the future manufacture and sell the American Schaeffer & Budenberg line.

RETIRES FROM PIPE AND FITTINGS BUSINESS

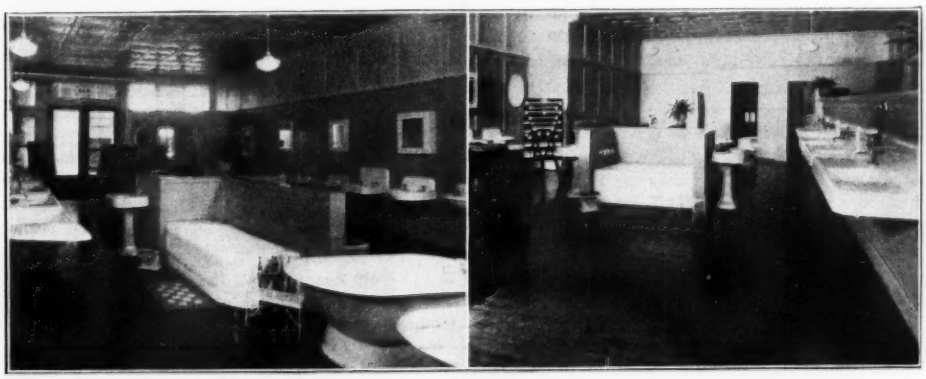
McMann & Taylor Co. of New York City has just announced that it is retiring from the pipe and fittings business.

CHANGES NAME TO FROST CO.

According to an announcement from the company, the Frost Company is the new name of the concern formerly known as the Frost Mfg. Co., Kenosha, Wis. There has been no change in officers or directors, according to the announcement, nor will policy or products of the company be changed in any way.

COMPLETES NEW WAREHOUSE

The Delaware Electric & Supply Co., Wilmington, Del., has just completed a new warehouse and altered the old plant to reduce costs and facilitate the movement of plumbing and heating supplies. The plant occupies a site on Shipley streets between Second and Third streets, running through the block to Orange street, on which street the frontage is approximately 130 feet. The total floor space is 60,000 square feet. One of the company's prob-



Two views of the show room of the Delaware Electric & Supply Co., of Wilmington, Del.

Photo taken at sales conference of Hotstream Heater Co.

lems was to relieve the congestion caused by the loading and unloading of its trucks. This was accomplished by placing two driveways in the new plant, one 20 feet wide, the other 10 feet wide, the entrance being from the Orange street side.

The new building has two stories. The second story is fitted with overhead electric traveling crane. The lower floor of the new building contains a machine shop fitted with six pipe cutting, threading and drilling machines, also a jib crane for handling the heavy material.

The offices, which are on the second floor, have been relighted and also equipped with modern toilet facilities and the surroundings made bright and comfortable for the clerical force.

For the convenience of plumbers, architects, and house-owners, the company maintains a show room adjoining the store. In this display plumbing materials and supplies are shown.

Seven trucks and automobiles are operated, and the territory covered includes the entire state of Delaware, Chester and Delaware counties in Pennsylvania, and the Eastern shore of Maryland.

MYERS SALESMEN TO HEAR TRANS-OCEANIC CONVERSATION

Salesmen of the F. E. Myers & Bro. Co., Ashland, Ohio, will be greeted by a surprise on July 24 when they meet for the annual sales convention of the company. Arrangements have been made for the convention to hear a telephone conversation between Guy C. Myers, vice president of the company, who will be in his room in the Mayfair Hotel, London, Eng., and P. A. Myers, president of the company, who will talk from a booth in the convention hall.

Loud speakers will be installed in the hall so that the salesmen can hear the greetings of their vice president, as well as both sides of the conversation. This is said to be the first time that amplifiers have been used in trans-oceanic conversation.

ESTABLISHES PACIFIC COAST WAREHOUSE

The Van Dorn Electric Tool Co., Cleveland, Ohio, announced recently that its sales branches in Los Angeles and San Francisco, Calif., and Seattle, Wash., and its service branches in Los Angeles, Oakland and Seattle, have been supplemented by the establishment of a warehousing and service bureau at 525 East Tenth street, Oakland, Calif. All Pacific Coast shipments will be made from that point.

Sales departments will be operated separately in Los Angeles, San Francisco and Seattle, in charge of Waldo H. Blair, Harry W. White and Roy Wise, respectively.

THE HOTSTREAM HEATER CO.'S ANNUAL SALES MEETING

The Hotstream Heater Co. of Cleveland, Ohio, held its annual sales meeting June 28 and 29, at which selling plans on the company's products were discussed. The convention was brought to a close with a dinner at the Hollenden Hotel. A photograph of the gentlemen at the meeting is published herewith. Reading from left to right, in the top row, are: Lorin Berne, Cleveland; George Hamburger, Denver; W. H. Cunningham, Toronto, Canada; H. C. Schmidt, New York City; E. W. Bethel, special representative; Chas. Lipschutz, Philadelphia; E. Sanger, Detroit; C. C. Brown, special representative; John McMahon, Chicago; Lawrence Burke, Boston; Chas. F. Stumpf, special representative; Walter K. Sladden, Cleveland; Fred Wilsey, Minneapolis, and Oscar C. Andersen, Chicago. Seated in the front row, from left to right, are: C. H. Morrow, superintendent; L. R. Mendelson, president; H. C. Berne, secretary and treasurer; Geo. G. Gebhart, sales manager. Two of the salesmen were absent when the photograph was taken, George Killits of Portland, Ore., and W. P. Horn of San Francisco.

HOLD EASTERN SALES CONFERENCE

Salesmen of the New York State district of the Johns-Manville Corp. closed a two days' gathering held at the Hotel Syracuse, Syracuse, N. Y., on July 6. Twenty-eight salesmen and staff representatives attended the two-day session.

H. P. Rankin, manager of the eastern division, was one of the principal speakers, and G. B. Frankland, sales manager of the New York state district, was in charge of the affair.

HACKSAW BLADES STANDARDS ADOPTED

It is announced by the Bureau of Standards, Department of Commerce, that the department has received acceptances from a sufficient number of producers, distributors and users of hacksaw blades to insure the general adoption of the simplified practice recommendation on that product.

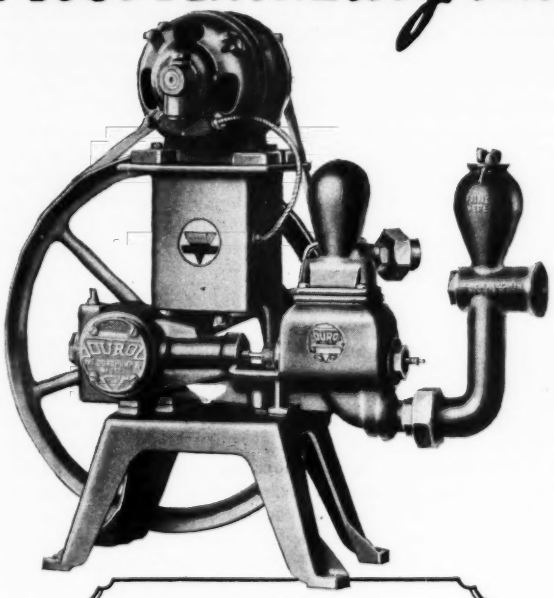
The effective date of the recommendation has therefore been set as July 1, 1928, for production, and January 1, 1929, for stocks.

M. T. G. A. ELECTS NEW MEMBER

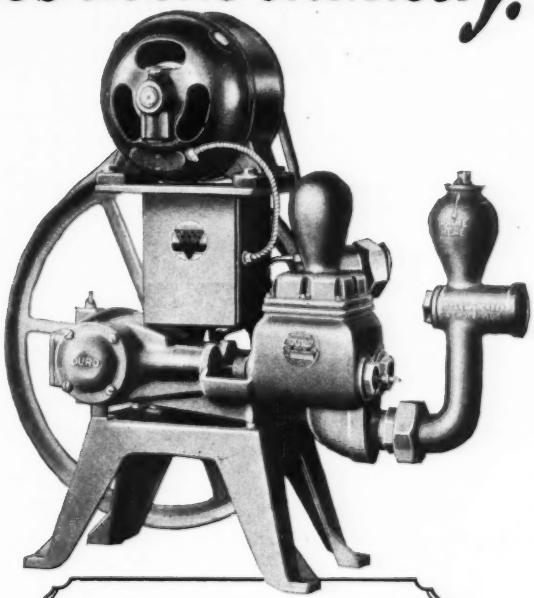
A new member has recently joined the Metropolitan Trade Golf Association, it is announced by Secretary F. W. Broatch. He is Fred Richardson, vice president of the Richardson & Boynton Co., 260 Fifth avenue, New York City. Mr. Richardson is an athlete of note, being a former Lawrenceville and Princeton star, and now has a U. S. G. A. handicap of five.

New DURO Products

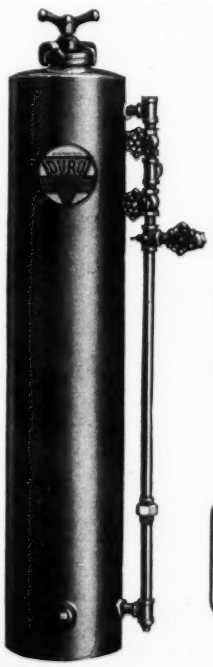
Most Amazing Values in the Industry!



No. X-300 Shallow Well Pump. Pumping capacity—300 gallons per hour. Retail Price—$92.50 f. o. b. Dayton.



No. X-500 Shallow Well Pump. Pumping capacity—500 gallons per hour. Retail Price—$130.00 f. o. b. Dayton.



Four of the most remarkable values ever offered. Practical products of guaranteed quality for which every dealer recognizes the ready demand. And prices are so low as to meet competition from any source.

Most Gallons per Dollar

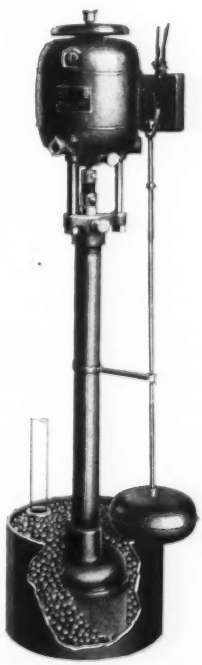
Think what this means to you! Line up with Duro, the live one—NOW. Write quick for complete details and new price sheet.

THE DURO COMPANY
1007 Monument Ave.
Dayton, Ohio

Rapid Flow Softener. Softening capacity 650 gallons on 20 grains hardness. Retail Price—$75.00 f. o. b. Dayton.

ADVISORY SERVICE — GUARANTEED DURO MADE BY THE DURO COMPANY DAYTON OHIO

Cellar Drainer. Pumping capacity 2,500 gallons per hour at 8 ft. lift. Retail Price—Complete with Filter Box, $90.00 f. o. b. Dayton.



GREATER CAPACITIES ~~~ SLOW SPEED ~~~ NOISELESS OPERATION ~~~ CARE FREE SERVICE

60.3% of the leading
PLUMBING CONTRACTORS
in the EAST NORTH CENTRAL STATES*
select
ANACONDA
as the
best known
BRASS PIPE
*Wisconsin, Michigan, Illinois, Indiana, Ohio

Even its looks help you to sell it

EVEN a piece of machinery can be so beautifully made, so smooth running, as to give the same thrill one feels on seeing a well bred horse or a prize winning cow.

Farmers have told us that the Crane Deep Well Automatic Water System No. 850 is such a machine. At any rate, when it was exhibited at the American Farm Bureau Federation convention, it brought "ohs" and "ahs" from visitors.

Backed by the 73 year Crane reputation, its very appearance helps to close sales. Write for discounts and full selling information.

Deep Well System No. 850

Pumping water from depths down to 250 feet and storing it under pressure to supply running water to farm and suburban homes. Made in all sizes and capacities. Other Crane systems, shallow or deep well, for all purposes.

CRANE

CRANE CO., 836 S. MICHIGAN AVE., CHICAGO, ILL.
Branches in all principal cities

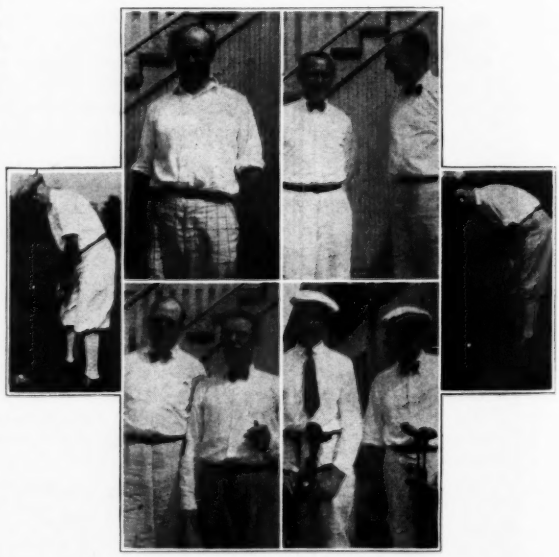
WESTERN TRADE PLAYS GLEN FLORA

Glen Flora Country Club, in Waukegan, Ill., was the scene of the July tournament of the Western Trade Golf Association on Thursday, the twelfth. Somewhat cloudy weather did not prevent forty-nine players and guests from enjoying their golf on this favorite course of the association and the usual good time was the order of the day.

J. H. O'Brien, vice president of the association, presided in the absence of President Monaghan and, before awarding prizes, gave the meeting over to a "pep" session on the coming match between the Western Trade Golf Association and the Michigan Trade Golf Association, to be held in Battle Creek, Mich., August 16. He called on W. M. Byrd, Jr., an old member of the Western Trade, to tell about the barbecue dinner that he will serve after the match at Battle Creek. Mr. Byrd said that if the members will play the golf, he will feed them, and he urged everyone to be present. J. A. Cutler, captain of the association, H. W. Evans, J. J. O'Shea and other enthusiasts described the Battle Creek party as the best of the year and, through these combined bursts of eloquence, a large crowd pledged itself to make the journey.

Openings in the membership enabled the association to vote in twelve new members—George E. Tebbetts, A. U. Gerber, F. S. King, E. B. Brown, Jr., H. C. Roeder, W. M. Scudder, A. A. Peterson, W. H. L. Smythe, W. D. Martin, Jr., H. J. Bradley, William S. Crosby and John D. Small.

Charles E. Price had the low net of the day and won the association cup for the month, in addition to first prize in his class. First in the morning qualifying round was H. W. Evans, who chose a loving cup as his award. E. W. Thomas, Jr., was high in classes A and B, with A. P. Campbell second, the prizes for these two positions being a silver gravy boat and a golf bag, respectively. First in class C was R. H. Smalley, with W. A. Taylor runner-up. A silver flask and a duffel bag were the awards in the order named. Price won a silver flask for placing first in



Left picture: H. G. Thomas of Warren Webster & Co.—Right picture: Hale J. Denny of the Bridgeport Brass Co.—Top row: George H. Dickerson of the Mehring & Hanson Co.; Harold A. Cross of the U. S. Sanitary Mfg. Co.; Frank B. Hackett of the Brunswick-Balke-Collender Co.—Bottom row: George E. Tebbetts, engineer; John J. O'Shea of the American Heating & Plumbing Corp.; O. H. Theleen and W. J. Frost, both of the Frost Co. Photos taken at a meeting of the Western Trade Golf Association

class D, and J. V. Brunner was given a duffel bag for second in the same division.

W. H. L. Smythe, newly elected member, played as a guest for the day and won the guest prize on a gross 84. J. A. Cutler won the blind bogey prize, which was a steak set. P. M. Munn earned the duffer's cup.

Scores of the day follow:

Player	G.	H.	N.	Player	G.	H.	N.
N. Paul Fenner..	93	12	81	Geo. Tebbetts (Guest)	104		
R. H. Smalley...	93	20	73	E. C. O'Connor..	104	19	85
C. E. Price.....	100	28	72	J. T. Fitzsimmons	114	27	87
J. C. Matchett...	110	26	84	H. W. Evans....	98	22	76
E. A. Ashby.....	107	27	80	C. F. Olsen.....	90	9	81
W. B. Ashby (Guest)	111			H. J. Bradley (Guest)	87		
W. T. Walters...	110	30	80	G. C. Vanden Boom	104	19	85
John D. Small (Guest)	134			E. C. McFadden (Guest)	107		
J. V. Brunner....	105	26	79	J. H. Milliken...	93	14	79
M. G. Henderson.	100	20	80	H. G. Thomas....	100	18	82
E. M. Tennant...	100	18	82	F. N. Hoyt (Guest)	98		
P. M. Munn.....	119	30	89	J. A. Cutler.....	92	14	78
A. H. Jolliffe ...	108	21	87	J. H. O'Brien....	94	17	77
Wm. M. Byrd....	96	17	79	E. Rich (Guest).	109	30	79
H. E. Crum, Jr..	102	22	80	H. M. Hart.....	97	19	78
W. A. Taylor....	94	19	75	C. W. Lampe (Guest)	106		
W. H. L. Smythe (Guest)	84			J. J. O'Shea.....	99	22	77
E. W. Thomas, Jr.	85	10	75	R. Cooper, Jr....	101	18	83
E. H. Christiansen	84	6	78	G. A. Jones.....	91	10	81
B. R. Klekamp (Guest)	95			E. E. Ellis.....	91	15	76
B. Elwell (Guest)	93			A. E. Norman, Jr.	81	3	78
R. Bauman (Guest)	84			L. J. Pitcher....	98	11	87
F. J. Cushing....	99	24	75	A. P. Campbell..	91	14	77
D. Roy Hickey (Guest)	99			R. E. Moore.....	102	22	80
Wm. Thumm....	114	30	84				

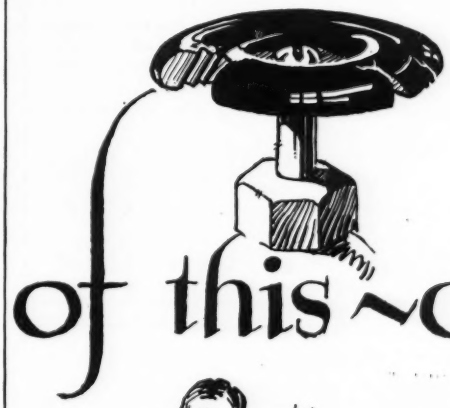
RAIN FAILS TO STOP NEW JERSEY GOLFERS

Tuesday, July 10, dawned dark and foggy in Northern New Jersey, and many members of the Plumbing and Heating Trades Golf Association, all set to journey to Somerville and play at the Raritan Valley Country Club in the association's July meet, must have felt their chances of playing 27 holes rather slender. They were right in the assumption, but, despite the weather man and the rain, 40 intrepid members and guests went, played and enjoyed it.

A. L. Jeffers, of Johns-Manville Corp., a new member, proved the star of the day. Not only did Mr. Jeffers turn in the best net score in Class A during the morning round, but he repeated in the afternoon, and annexed his first leg on the President Fred Engelberger cup, which goes to the first member who wins it three times. His morning score earned him three balls, one more than E. M. Robinson, of William S. Roe, who had a net 34, two strokes behind Mr. Jeffers. Third prize in this classification was taken by Stanley Miller, Newark master plumber, with a net 35, earned with a gross 45 for the nine holes. Class B honors went to John E. Joyce, Newark contractor, who shot 52-16-36, with M. A. Buckley, United States Radiator Corp., and W. H. Oleson, "Domestic Engineering," tying for second and third, each with a gross 52 and a 15 handicap.

The afternoon competition, despite the rain, brought out some fair scores for the cleverly trapped course, one of the most interesting of those which the association has played. Jesse Thorn, Trenton Potteries Co., with an 84 and a 12 handicap, placed second in Class A, and G. W. Sahlin, C. F. Church Mfg. Co., was a stroke behind. A tie resulted between F. C. Stille, National Tube Co., the host of the day, and President Engelberger, the former winning the toss. J. A. LaDue, Jenkins Bros., was the last winner in the higher classification, and also took low gross, an 83. Herman Baumgartner, Newark master, led the Class B contingent, being two putts better than M.

NO MORE~



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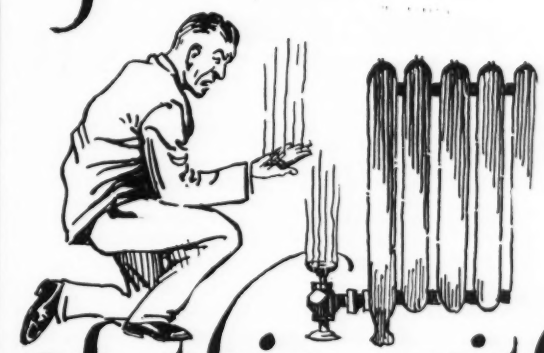

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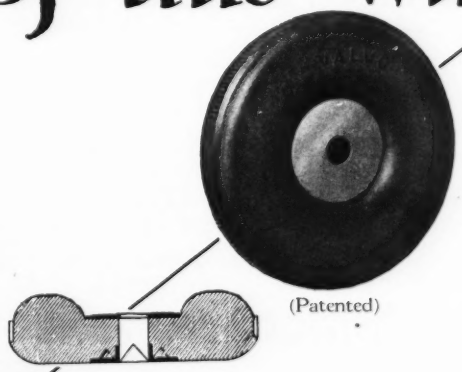


(Patented)

VALVO

Every VALVO WHEEL is fully guaranteed to withstand ordinary abuses. Made as it is of special asbestos, with bottom plate of brass it is both sturdy and heat resisting. The smooth mold finish polishes with wear. Made in every practical size.

FROM YOUR JOBBER

JENKINS MFG. COMPANY

BLOOMFIELD -:- NEW JERSEY

Haas

Flush Valves for use in combination with all styles of bowls for all classes of service to operate under low or high pressure water supply.

Water Closets for every type or class of service.

Frost Proof Closets. Direct flush or after flushing.

Write for catalog.

Philip Haas Co., Dayton, Ohio

M-VB

DOUBLE ACTING LEVER

"Take care of the materials and the dollars will take care of themselves." Thus the modern plumber paraphrases the wisdom of good old Ben Franklin. Plumbers who have learned the secret of fat bank accounts use M-VB Closet Tank Fittings. They are of high grade quality — worthy of the finest craftsmanship.

MORENCY-VAN BUREN
Manufacturing Division, Scovill Manufacturing Co.
Sturgis, Michigan

WISECO Tubular Brass Goods

are now being regularly furnished with

NICKEL SILVER BEAD CHAIN

ALL SIZES AND LENGTHS CARRIED IN STOCK FOR PROMPT SHIPMENT

CHROMIUM PLATED IF REQUIRED

ASK YOUR JOBBER

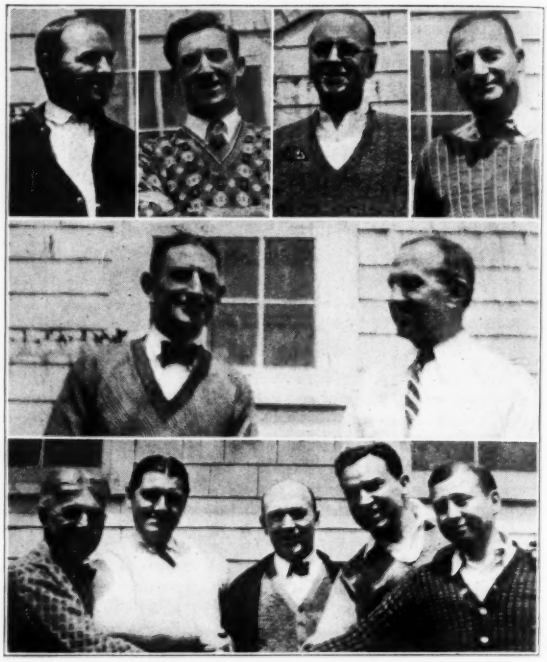
J. B. WISE, Inc., WATERTOWN, N. Y.

Improved "Wilhelmi" Boilers

Built of the finest of lake copper, Improved "Wilhelmi" Copper Boilers give matchless performance at all times under the most adverse conditions.

Write for our complete catalog.

HAYES MFG. Co., *Makers*
Paterson, New Jersey



Top row: Joseph Buday, J. H. Stulsaft Company; H. B. Russell, Speakman Co.; Dwight S. Ives, Chicago Pottery Co.; Hugh T. Goodwin, Walworth Co. Middle row: A. J. Tesch, Spencer Heater Co.; E. J. Bender, Pierce, Butler & Pierce Mfg. Corp. Bottom row: Charles Wood, Newark contractor; J. A. LaDue, Jenkins Bros.; Harry Fritts, William S. Roe, Inc., Newark; J. White, secretary, Jenkins Bros.; C. B. Wynne, Standard Sanitary Mfg. Co.—Photos taken at the tournament of the Plumbing and Heating Trades Golf Association of New Jersey at the Shackamaxon Club

Bal, another Newark contractor, who had a net 74. A tie developed between Joseph Hogan, United States Radiator Corp., and W. C. Clift, of F. Bowden Co., the former winning the toss. Andrew A. Taaffe, director of the National Association of Master Plumbers, slid into fifth place with his net 81, and William J. Patterson, also of Newark, won the final prize. Guest prizes went to B. Werner of Jersey City and Lee Kellar, Trenton Potteries Co.

At dinner, Captain Robinson announced that the next meet would be held at Canoe Brook, near Summit, N. J., on Thursday, August 9, the hosts being James S. Weaver, Central Tube Co., and F. R. Moody, Sloan Valve Co.

The scores in the afternoon were as follows:

Class A

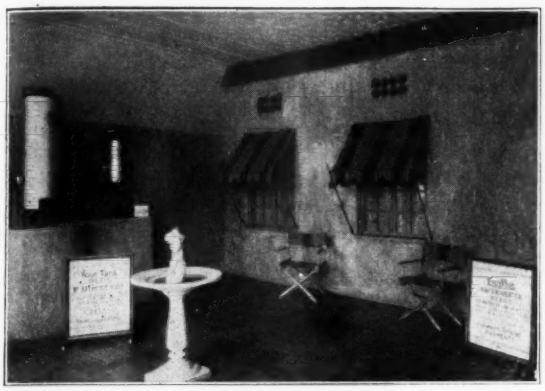
Player	G.	H.	N.	Player	G.	H.	N.
Miners	118	22	96	Robinson	96	24	72
La Due	83	6	77	Jeffers	91	20	71
Thorne	84	12	72	Sahlin	97	24	73
Miller, S.	96	20	76	Engleberger	100	24	76
Stille	85	9	76				

Class B

Bosworth	142	46	96	Buckley	111	30	81
Baumgartner	98	26	72	Oleson	114	30	84
Taaffe	127	46	81	Byrne	127	36	91
Del Tufo	100	20	80	Clift	114	36	78
Blackwood	129	36	93	Miller, B.	140	36	104
Hogan	110	32	78	Buday	160	46	114
Bender	121	36	85	Moran	179	40	139
Bal	110	36	74	Rogers	130	46	84
Filgon	131	40	91	Patterson	129	46	83
Tobin	118	30	88	Marquard	138	46	92
Joyce	113	32	81				

Guests

H. D. Jackes	106	20	86	H. M. Goldberg	104	20	84
G. M. Rose	105	20	85	N. J. Convery	124	36	88
E. N. Keyes	130	30	100	W. A. O'Hara	102	20	82
B. Werner	104	36	68	Lee Keller	110	30	80
J. Edwards	122	36	86	N. C. Nicol	124	30	94



New display room of EverHot Heater Sales Co., at 4619 North Western avenue, Chicago

PRESIDENT WM. F. WEBER OF NEW YORK CHAPTER, N. A. P. H. S., ANNOUNCES APPOINTMENT OF COMMITTEES

One of the features of the last meeting of the New York Chapter, National Association of Plumbing and Heating Salesmen, was the presentation of a cup by the entertainment committee, this to be given to the member who proves himself of most value to the association during the ensuing year, and to become the permanent property of this member under certain conditions. The decision as to who has earned the trophy will be made by a committee consisting of John H. Taylor, Eugene Smith and E. J. Ritchie.

Committees for the ensuing year were appointed by President William F. Weber. These include: Rules, Eugene Smith, Henry Stein, Pierre R. Falk; audit, William Munch, Gustave C. Beecher and Eugene Norman; membership, Lewis W. White, Elmer Wilson and L. A. Fisk; applications, Harry Olsen, Saul Ungerleider, D. Edward Cassin, John J. Hansch, T. Russell Forster, Thomas J. Lendino and H. L. Chute; entertainment, Fillus L. Dodson, Harry A. Swenson, Harold Thompson, Arthur S. Forster and Walter T. Hein; lecture and publicity committee, Mr. Weber, Joseph L. Spivak and Joseph A. Hanrahan; sick, Alfred H. Payson, James E. Ramage and Albert H. Hanson; grievance, E. J. Ritchie, John H. Taylor and Harry LaCroix; trade relations, John H. Taylor, Harry LeCroix, Lewis W. White, Harry Olsen and Harold Thompson.

Personal Mention

W. S. Babson, vice president of the Consolidated Supply Co., Portland, Ore., is active on the executive committee for "Buyers' Week," which will be held in that city August 6-11. This event is sponsored by leading manufacturers and jobbers in Oregon and draws patronage from the entire Pacific Northwest.

Frank S. Schwaab, formerly Philadelphia manager for the Pittsburg Water Heater Co., has joined the sales force of the Esda Mfg. Co., Garwood, N. J.

Lee Turner, of the New York office of A. M. Byers Co., is on a trip to France. Mr. Turner expects to spend about a month away from the office on the vacation.

Harry J. Walther, well known to the trade in Philadelphia, is again connected with the sales force of H. B.

MOHAWK SEPTIC TANKS

Features Worth While

Made of copper bearing steel and dipped in hot asphalt insuring a heavy coating both inside and out.

Built-in pipe connections eliminate breaking and bending of the pipe connections when handling and tank settlement.

Handle on the cover makes it easy to install.

MOHAWK SEPTIC TANK CO, SCHENECTADY, N.Y.

Smith Co., boiler manufacturers. Mr. Walther was with this company for a long period several years ago, leaving to become identified with other companies in the Philadelphia area, having been last with the Henry B. Pancoast Co. He has been active in the affairs of the Philadelphia Plumbsteam Club, formerly serving as the chairman of the entertainment committee.

E. A. Krah, Jr., and **C. A. Detweiler,** both executives of the Pittsburg Water Heater Co., of Pittsburgh, Pa., have organized and are now operating the Pittsburg

E. A. Krah, Jr.

C. A. Detweiler

Water Heater Sales Company at 10 Jenkins Arcade, Pittsburgh, Pa., as well as retaining their executive positions with the company. Mr. Krah, superintendent and industrial sales engineer, still retains his place on the board of the company and will act in an advisory capacity on all engineering problems. He has been connected with the water heater industry since 1897. Mr. Detweiler entered the water heater field in 1898 and has since 1908 been secretary and sales manager of the Pittsburg Water Heater Co. and will continue as secretary and member of its board of directors. The Pittsburg Water Heater Sales Co. on July 1 took charge of the Pittsburgh territory and eight surrounding counties, but the entire city sales organization will remain intact under the new management.

Thomas Follett, manager of the Portland (Ore.) branch of the M. Stulsaft Co., is on a trip to San Francisco to visit the home office of the firm.

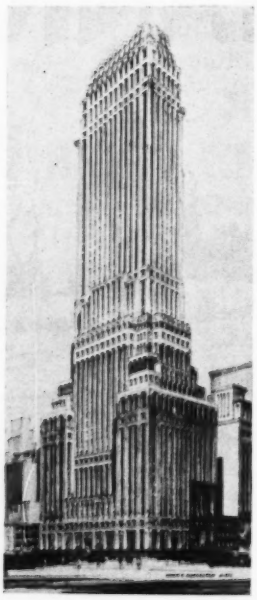
New Trade Literature

"How to Tell Good Pipe"

The Youngstown Sheet & Tube Co. of Youngstown, Ohio, is distributing a booklet with the above title. Information is given about the manufacture of pipe, and various methods of testing pipe are described. Photographs show one of the company's plants, the general laboratories, butt-weld tube mills, and specimens of pipe.

Booklet in Colors Sent Out by Richmond Radiator Co.

The Richmond Radiator Co., New York City, has recently issued a new catalog, an attractively printed book of 28 pages. Multi-colored plates are used to show the boilers, especially the jacketed types, in their proper settings, and technical and other information about many of the boilers in the company's line is given. This is in addition to many cuts showing sectional views of some of the types, and descriptions of various units that go into the boilers, such as push nipples, grates, the base, the automatic regulator, smoke connection, trimmings, and the like. Recommendations concerning chimney flues are



Chanin Bldg., New York, where Youngstown steel pipe is used in plumbing and heating. Architects —Sloan & Robertson; Mech. Engrs. — Clark, MacMullen, & Riley; Plumbing Contractor — Louis Black; Heating Contractor — Tarcho Bros.

Piped for Permanence

YOUNGSTOWN steel pipe is the soundest kind of insurance against pipe failures. The name Youngstown on a length of pipe is a symbol of the highest quality which can be secured—a warranty of long, trouble-free pipe service.

Plumbing and heating contractors *know* that a Youngstown piped job is a permanent one. That's why so many thousands of installations are "piped with Youngstown"—for plumbing—for heating—for sprinkler systems—for every conceivable use where pipe is needed.

THE YOUNGSTOWN SHEET AND TUBE CO.
General Offices—Youngstown, Ohio
Sales Offices in 20 Cities

YOUNGSTOWN

given, as are actual output ratings and commercial ratings. A few of the patterns of enameled ware made by the Richmond Radiator Co. are also reproduced and pictures of some of the company's plants are shown. Enclosed with the catalog is a circular, entitled "Boiler Romance." This tells the story of the Richmond boiler to the steamfitter who is familiar with boiler construction.

New Catalog of Josam Mfg. Co.

The new Catalog "G," just issued by Josam Mfg. Co. of Cleveland, Ohio, will prove a valuable addition to the consulting libraries of building contractors and plumbers. It contains 72 pages with more than 100 illustrations, recommended uses, complete descriptions and detailed drawings, sizes and weights of every product in the company's line. An interesting feature of this catalog is its illustrated index. It directs the user by word and picture to information on drains, grease, plaster and hair interceptors, instant water heaters, swimming pool equipment, open seat swing check valves, open seat back water sewer valves, combination closet fittings and bends with cast closed end.

Automatic Fire Prevention

Automatic fire prevention is the subject of a booklet just issued by The Viking Corporation of Hastings, Mich. The booklet explains in detail how savings on insurance will pay for automatic fire prevention. A table shows sums spent each year for insurance.

THIS WAS NEWS 1908 20 YEARS AGO

July 18, 1908

The twenty-sixth convention of the National Association of Master Plumbers was held July 14, 15 and 16 at Mechanics Hall, Boston. Isaac J. Brown, of New York, chairman of the executive committee of New York City Association, on behalf of his organization, presented President T. A. Hill with a sterling silver gavel. Curtis Guild, Jr., governor of Massachusetts, and Mayor George A. Hibbard of Boston welcomed the delegates. Interesting reports were read by Financial Secretary T. S. Cochrane, A. Selden Walker, chairman of the executive committee; D. H. Roberts, chairman of the apprenticeship committee; David Craig, chairman of the sanitary committee; William McCoach, treasurer. Past Presidents Jeremiah Sheehan, of St. Louis, and E. D. Hornbrook, of Kansas City, Mo., also addressed the convention. W. H. Halsey, of Milwaukee, Wis., was unanimously elected president for the coming year, and Walter D. Nolan, of Washington, was chosen vice president.

———1908———

The San Francisco Master Plumbers' Association has been very busy for the past two or three months, working in conjunction with the Board of Public Health and the Board of Public Works in framing a new plumbing ordinance for the city.

———1908———

R. F. McKay of Brooklyn has moved his heating business from 121 Meserole avenue to 144 Java street.

———1908———

The Thomas J. Byrne Co. of New York City has been incorporated with a capital of $5,000 to conduct a plumbing business. The incorporators are James O'Rourke, Thomas J. Byrne and Frank J. Scanlon.

FITZGIBBONS STEEL BOILERS
"The Boiler you can afford to own"

Steel-assured dependability and durability
Advanced scientific design
Extraordinary economy
Compact, brickless construction
Practically no maintenance expense
Proved by forty years of faithful service
Heating Sizes from 300 to 36,000 sq. ft. Steam Rating
Power Sizes from 40 to 350 H. P.

Complete information, ratings and dimensions upon request

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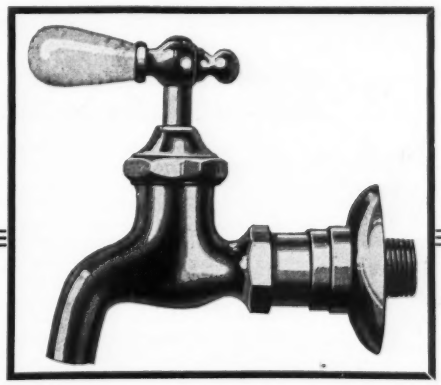

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More than 10,000 plumbers buy the brass goods that they use by the "EBW" trade mark.

They have learned thru years of experience that this mark is their assurance of the best workmanship and highest quality. They know that the "EBW" mark means right price, big profits and entire customer satisfaction.

Let the "EBW" trade mark guide you in your buying.

EBW

The Enterprise Brass Works trade mark As your assurance of highest quality brass goods. Be sure it's on the brass goods you install.

Our Catalog

ENTERPRISE BRASS WORKS
MUSKEGON, MICHIGAN

SIMPLIFIED VAPOR HEAT

AN easy to install system that gives positive control of low pressure vapor, within very close limits.

A post card will bring you Booklet and "The Hutchison Fitter."

Hutchison Regulator Sales Corporation
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HUTCHISON SYSTEM

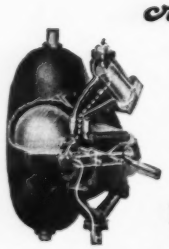
Dole

Automatic All Metal
Non-Adjustable Thermostatic

SYPHON AIR VALVES

The Dole Valve Company, 1913-33 Carroll Ave., Chicago

Avoid the kicks about cracked boiler sections



It's usually the owner's fault when a boiler section cracks or burns out... but why not avoid the argument altogether by installing the one device that will prevent cracked or burned sections? The new bulletin shows why the *self-cleaning* McDonnell & Miller Duplex Feeder is in a class by itself.

McDONNELL & MILLER
400 N. Michigan Ave., Chicago

Self-Cleaning Duplex Feeder

Paragon Offset Ball Cock

FOR tanks with supply close to corner. You don't touch the supply connection when you renew the bronze seat. And the lead refill neither splits nor corrodes. A quality fitting throughout. Write for Folder on complete line.

Through Your Wholesaler

The CENTRAL BRASS Mfg. Co.
PARAGON DIVISION CLEVELAND O.

Markets

(Continued from Page 56)

Pottery

Pottery shipments of higher grade ware continued to attain, and in some cases surpass, the level which had been established for the past month. Most potters are enjoying substantial releases of staples on orders which wholesalers had previously contracted for. Master plumbers' orders are becoming more frequent, and jobbers are, therefore, stocking in better quantities. Deliveries from sources are prompt. Makers' prices were not changed.

Plumbers' Brass Goods

Demand for both cast and tubular products was of good dimension, according to the majority of wholesalers in this section. Consumption requirements have been steadily gaining since early June and makers' representatives seem quite optimistic as to July and August totals. Jobbers' shelves show ample assortments for the fulfillment of their customers' immediate needs. Deliveries in all cases are being expeditiously effected. No price changes have been announced by either makers or distributors.

Range Boilers

Wholesalers have reflected, in their quotations to plumbing contractors, the price reduction recently announced by some manufacturers. Consumption of this commodity continues quite heavy, and jobbers' inventories in most cases are replete. Early deliveries from sources are possible.

Boilers and Radiators

Demand can hardly be characterized as better than fair, according to the majority of producers and distributors. There is, nevertheless, a good seasonal tonnage being consumed. Makers are shipping against lower priced orders of distributors and are making larger new bookings from one week to the next. Shipments are being effected in prompt manner. Makers' prices are unchanged.

PACIFIC COAST

Demand Maintains Steady Pace—

General business continues at a fairly steady pace without showing any material change from week to week. There are not any outstanding features to the market. The demand for material as a whole is fairly satisfactory. Most distributors are aiming to carry only sufficient stocks to take care of the trade's immediate orders and are continuing a general policy of replacing material in about the same volume as sales.

Jobbers' prices to the trade, in the various jobbing centers, are being fairly well maintained.

Soil Pipe

A steady, although not very heavy demand, for this commodity continues, although most inquiries are in small lots for shipment. Most jobbers have rather heavy stocks of this commodity and also a fair amount of tonnage booked for future delivery from factories. Jobbers' prices to the trade remain unchanged.

Pipe—Steel and Wrought Iron

The demand for these products showed very little change during the past week and continues in about the same tonnage as has prevailed for the past few months. There are many distributors of pipe besides the plumbing and heating supply jobbers, all of whom carry well assorted stocks, and, in addition, there is foreign pipe reaching the various seaboard ports of the Coast, all of which has a bearing on the amount of business done by the in-

dividual distributor. Distributors' prices for out of stock delivery remain unchanged.

Fittings

Most of the trade is not purchasing fittings until a definite need for them is created and, with the well assorted stocks in the various distributors' hands, little delay is experienced in obtaining any of the trade's requirements on short notice. Distributors' prices to the trade are based on present replacement costs and remain unchanged.

Enameled Ware

A seasonable demand for enameled ware continues, which, although not so heavy as for the same period of the previous year, still is of fairly satisfactory volume. Most distributors have at present well assorted stocks of enameled ware and nearby Coast factories and manufacturers' warehouses are in a position to make prompt delivery of ware if required. Distributors' prices to the trade are reflecting their present replacement costs and remain unchanged.

Pottery

A steady demand for pottery continues—mostly for a few pieces of ware for immediate consumption, and there are very few inquiries out for future requirements. Most distributors have sufficient stock to take care of all of the trade's present needs without delay, and nearby potteries are in a position to make prompt delivery when required. Distributors' prices remain unchanged.

Plumbers' Brass Goods

The demand for this commodity may be said to be active and it appears to be getting a little better from week to week. There are many distributors of this commodity on the Coast, and also several manufacturers who are soliciting the trade direct, all of which has a tendency to reduce the jobbers' sales. This commodity is also manufactured on the Pacific Coast in large volume, with the result that early delivery can be made on any orders, either to the jobbers or to the trade. Prices, as a rule, are firm and remain unchanged.

Range Boilers

Demand for range boilers, if anything, is little lighter than it has been. Distributors have well assorted stocks and can also secure prompt delivery from the manufacturers. Distributors' prices to the trade are reflecting present replacement costs and remain unchanged.

OIL BURNER MEN HOLD GOLF TOURNAMENT

The second annual golf tournament and jamboree of the Chicago Oil Burner Association was held at the Mohawk Country Club, July 12. Fifty members and guests attended.

F. C. Staples won the Risher Cup for 1928, and several other prizes were awarded in each class of membership, as well as guest prizes. Luncheon and dinner were served. H. E. Risher was chairman of the committee on arrangements.

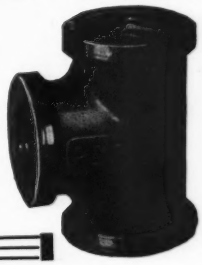
BAY COUNTIES MASTERS HEAR TALK ON BUREAU WORK

On the evening of June 23, J. C. Keene and George Wilson, Pacific Coast representatives of the Plumbing and Heating Industries' Bureau, accompanied by Norman Farlow of San Francisco, drove to Santa Cruz, where they addressed a well attended meeting of the Bay Counties Master Plumbers' Association.

The bureau men gave an interesting talk on the work of their organization, detailing the plans for a comprehensive expansion of business and just how the local plumber can link up his efforts with those of the bureau. The meeting was held in the Whitney building, President H. B. Underwood of the local association presiding.

P.B.F.

EVERY FITTING AIR TESTED UNDER WATER



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Irvington, New Jersey

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Patent Plumbing Fixtures and Duojet Water Closets

A LINE representing the most advanced ideas in sanitation. Economy of operation and ease of installation. Duojet Closets—Flush Valves—Self-Closing Basin Cocks—Combination Lavatory Fixtures—Pop-Up Wastes—Liquid Soap Fixtures, etc.

Manufactured and Sold Exclusively by

THE IMPERIAL BRASS MFG. COMPANY
1231 West Harrison St. CHICAGO

A Choice of the Best

THAT'S what you get in replies from a "Domestic Engineering" Want Ad.

No matter what your problem—if you want a job or a man for a job, if you have some used equipment to sell or want to buy some, if you want to know what the leading books on plumbing and heating are, if you want bids on a job—a "Domestic Engineering" Want Ad will solve that problem.

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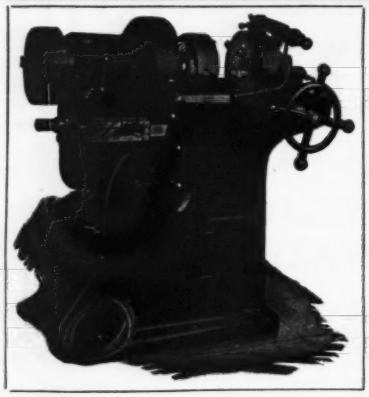
1900 Prairie Ave. Chicago, Ill.



"CHICAGO" No. 2

Power Pipe Threading Machine

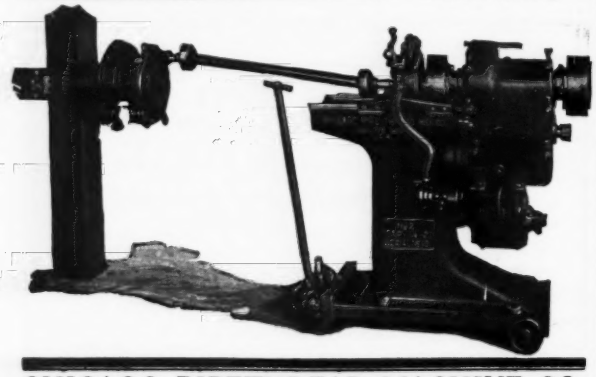
For Production and Precision Threading

PORTABLE

Capacity ¼" to 2" Pipe
" ½" to 1½" Bolt

FEATURING:
1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

Send for Catalog



CHICAGO PIPETHREAD MACHINE CO.
Offices and Factory: 1615 Racine St., RACINE, WIS. U. S. A.

Do you know that household acids and fruit juices will not affect the lustrous finish of

"RESISTO NOXCO ENAMELED WARE"

Manufactured by

The Union Sanitary Works
Noblesville, Indiana
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Houston, Texas
Little Rock, Ark.
Jackson, Miss.
Memphis, Tenn.
Dallas, Texas
Joplin, Mo.
Pocatello, Idaho

Convention Dates

August 21, 22, 23 and 24, 1928.—A. S. S. E.—The twenty-third annual convention of the American Society of Sanitary Engineering, to be held at the Pfister Hotel, Milwaukee, Wis.

August 24 and 25, 1928.—WISCONSIN—The annual convention of the Wisconsin Society of Plumbing Inspectors, to be held in Milwaukee, with headquarters at the Pfister Hotel.

September 17, 18, 19 and 20, 1928.—FUELS MEETING.—The Second National Fuels Meeting, at Cleveland, Ohio, under the auspices of the Cleveland Section of the American Society of Mechanical Engineers.

January 28, 29, 30 and 31, 1929.—A. S. H. V. E.—The annual meeting of the American Society of Heating and Ventilating Engineers, at Chicago, Ill.

May 23, 24 and 25, 1929.—N. A. P. H. S.—The fourth annual convention of the National Association of Plumbing and Heating Salesmen, to be held at Philadelphia.

COMING TRADE EVENTS

July 26, 1928.—The annual outing of the Master Plumbers' Association of Washington, D. C., to be held at Chapel Point, Md.

August 1, 1928.—The annual outing of the Fairfield County (Conn.) Master Plumbers' Association, Inc., to be held at Dorlon's Point, South Norwalk, Conn.

August 6, 1928.—The first golf tournament of the plumbing and heating industries of Richmond, Va., tentatively planned to be held at the Laurel Golf Club in that city.

August 15, 1928.—The annual outing of the Master Plumbers' Association of Montclair, Bloomfield, Verona and Vicinity to be held at Idlewild Park, Little Falls, N. J.

August 15, 1928.—The August meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at the Spring Haven Country Club, Wallingford, Pa.

August 16, 1928.—The annual outing and clambake of the Master Plumbers' Association of New Bedford (Mass.) and Vicinity, Inc., to be held at Whitfield's Pavilion, Fort Phoenix, Fairhaven, Mass.

August 16, 1928.—Inter-association golf tournament of the Western Trade Golf Association and the Michigan Trade Golf Association, to be held at Battle Creek Country Club, Battle Creek, Mich.

August 17 and 18, 1928.—The 1928 outing of the Virginia Chapter, Association of Plumbing and Heating Salesmen, to be held at Virginia Beach.

August 18, 1928.—The outing of the Brooklyn Plumbing Supply Credit Association, to be held at Karatsonyi's Hotel, Glenwood Landing, with automobiles leaving Trommer's Restaurant, Brooklyn, at 9 a. m.

August 28, 1928.—The annual outing of the Master Plumbers Association of the City of Trenton, N. J., to be held at the Fair Grounds in that city.

August 23, 1928.—The August meet of the Metropolitan Trade Golf Association, to be held at the Braidburn Country Club, Madison, N. J.

September 15, 1928.—The annual outing of the Nassau County South Shore Association, to be held at Narragansett Inn, Lindenhurst, L. I., N. Y.

September 19, 1928.—The September meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at the Green Valley Country Club in that city.

September 21, 1928.—Golf tournament of the Western Trade Golf Association, to be held at Glen Oak Country Club, Glen Ellyn, Ill.

September 29, 1928.—The annual outing of the Queensboro branch, Association of Master Plumbers of the City of New York, to be held at Narragansett Inn, L. I.

October 15, 1928.—October meet of the Delaware Valley Trade Golf Association, at the Columbia Country Club, Washington, D. C.

October 17, 1928.—The October meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at St. David's Country Club, Wayne, Pa.

October 23, 1928.—The October meet of the Metropolitan Trade Golf Association, to be held at the Wykagyl Country Club, New Rochelle, N. Y.

November 7, 1928.—The November meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at the Pine Valley Country Club, Clementon, N. J.

THE TRADE

NEWS FOR PLUMBING AND HEATING CONTRACTORS

PHILADELPHIA LEAGUE TO HOLD LARGE MEETING.

The Plumbing and Heating Development League of Philadelphia will hold a meeting on Monday evening, July 23, at the Elks' Club in that city. An attendance of about five hundred master plumbers is expected.

The executive committee of the Plumbing and Heating Industries' Bureau will also meet on that day, and the committee members are expected to be in attendance at the league meeting.

OPEN OFFICES AND MEETING ROOMS

The Plumbing and Heating Contractors of Winston-Salem, N. C., have recently opened association offices and meeting rooms at 201-202 Farmers National Bank Building, Winston-Salem, N. C.

NEW LOCAL FORMED IN CALIFORNIA

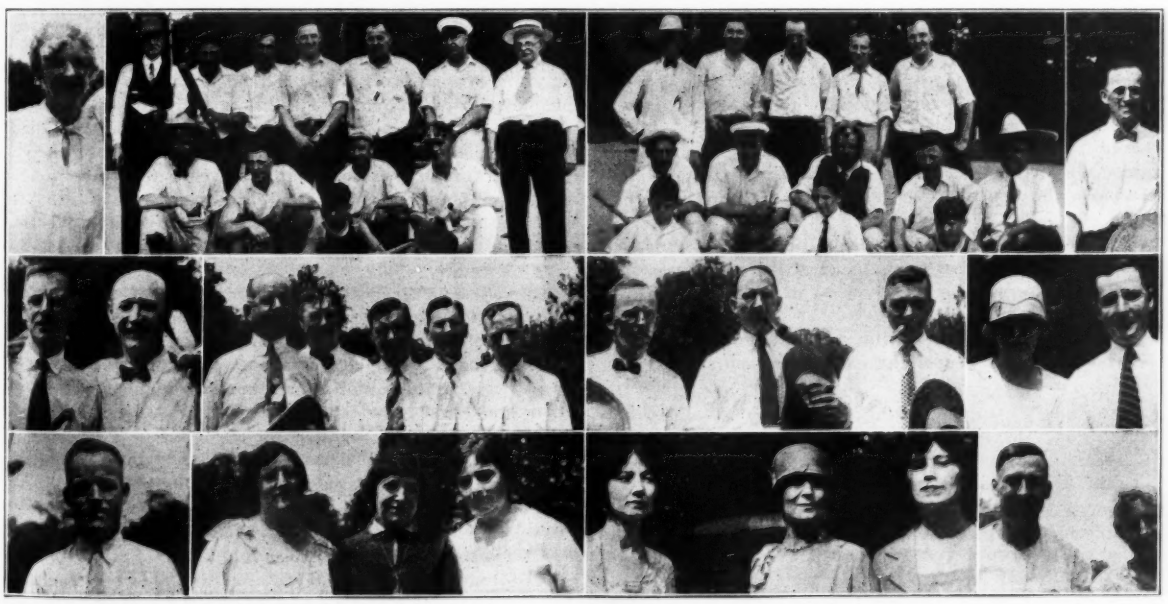
The Southern Orange County Master Plumbers Association was formed at a meeting held at Balboa, Calif., on the evening of Thursday, July 5. The new local takes in the towns of Laguna Beach, Balboa, Newport Beach, San Clemente and adjacent territory. James Harry Estus, 2205 Coast boulevard, Newport Beach, was elected president, and John R. Lugo, 209 Washington street, Balboa, secretary. This newest local almost completes the organization of the master plumbers in Los Angeles and Orange counties.

MANY ATTEND PHILADELPHIA OUTING

Saturday, July 7, was outing day for the Philadelphia Master Plumbers' Association at Memorial Park, Schwenksville, Pa. Led by Maney J. Feeney, president, and Walter Raid, chairman of the outing committee, a large caravan of automobiles wound its way along the beautiful Perkiomen River to the park to deposit master plumbers, their wives, children, guests and friends ready for a day of fun. The first order of business was the unloading of the huge baskets of fried chicken for a real old-fashioned basket picnic lunch.

The day was ideal for such a gathering, and not long after lunch the baseball enthusiasts were heading for the ball field. Frank Dykes and George Hicks were picked to captain two teams for the supremacy of the diamond. Captain Dyke's team showed unusual batting and fielding prowess and at the end of the sixth inning, when the game was called to allow the other athletic events to start, the score stood 13 to 4 in favor of Dyke's All-Stars.

The first event on the athletic card was the 30-yard dash for boys under 12 years. For first prize, Martin Birmingham received a sweat shirt. Ed. Quaid, Jr., received a necktie for second prize and a harmonica was third prize, which went to John Seibel. The next event was the 30-yard dash for girls under 12 years. Helen Feeney received a kodak for the first prize, Marie Keller, a rubber ball for second prize and Margaret Vadden re-



Top pictures: Mrs. Maney J. Feeney; the winning ball team, Frank Dykes, captain; the losers, George Hicks, captain; Martin A. Beahm. Middle row: George M. Hicks, Frank S. Dykes, captains of the two baseball teams; Maney J. Feeney, president of Philadelphia association; Philip Herring, Sr.; J. Soehle, J. Wynkoop, Harry Worrall, W. H. Beahm, Harry L. Stilwell, Walter Raid, chairman of outing committee; Mrs. and Mr. A. A. Miller. Bottom row: David S. Sanderson, vice president of Pennsylvania State Association; Mrs. Harry L. Stilwell, past president of Philadelphia Ladies' Auxiliary; Mrs. George M. Hicks, president; Mrs. Duncan A. Worrell, past president; Mrs. Harry Worrall, Mrs. William Ruhe, Mrs. Walter Ruhe, Mr. and Mrs. E. H. Rinear, Jr.

ceived a school composition book for third prize. The 60-yard dash for boys 12 to 16 years was next. A football was first prize, and was received by John Walsh. The second prize, won by James Walsh, was a scout knife, and Mark Solly received an airplane builder as third prize.

Girls from 12 to 16 participated in a 60-yard dash, and Roberta Meiklejohn won first prize, for which she received a perfume set. Jennie Quindlen won second prize and received a hand bag. Anna M. Nobs carried off third prize, which was a shopping notebook. The sack race for men was the next event, and Walter Heinrich won first prize and received an umbrella. Ed Quaid won second prize, for which he received an ash tray. Third prize, a pipe, was carried off by Frank Magee.

An egg and spoon race was held for women, and as first prize Marie Quindlen received a boudoir lamp. Alma Chidster received an aluminum pitcher for second prize and Helen Tilney received for third prize a zipper purse. The next event was a paper race for men, and Fred Heinrich received a dart board for first prize, A. Enderle, a pencil for second prize, and H. C. Stevenson an ash tray for third prize.

Mrs. A. Enderle won first prize in the balloon race for women and received an umbrella; Mrs. E. Vadden received a percolator for second prize, and Alma Chidster received a handkerchief bag for third prize. The balloon race for men was won by Bert Betz, E. Hendricks won second place, and A. Enderle, third, all receiving cigars for their prizes. Next a hammer and nail contest for women took place and Mrs. E. Boyce won a carving set for first prize; Mrs. W. Heinrich won second prize, which was a card and key set, and Miss A. Gosch received for third prize, a curio.

The shoe race for men was won by John Seibel and he received a pair of skates. Alex Smith won a baseball bat for second prize, and W. Heinrich won a baseball for third prize.

The ball throwing contest for men was won by Robert Hoke, who received cigars for the first prize. Joseph Cleary received cigarettes for second prize. A walk-tape-line-with-field-glasses-reversed contest was held for both men and women, and Mrs. W. Heinrich, Marie Quindlen, E. Bremmer and W. Heinrich all received glasses as their prizes. The tug of war was won by Messrs. Hendricks Heinrich, A. Enderle and M. Enderle.

During the day Robert Pflug-Felder, secretary of the association, made all of the children happy by distributing horns, peanuts and tickets for rides on the merry-go-round, as well as "Domestic Engineering" balloons. Swimming and boating was a pleasant sport for quite a few of the picnickers, while others were content to sit under the huge trees where the breeze was cool.

President Howard Yocom, Vice President David S. Sanderson and Secretary Christian Bachofer, of the state association, were surprise visitors to the outing and enjoyed watching the sports.

Great credit was given the committee in charge, which included Walter Raid, chairman; President Maney J. Feeney, master of ceremonies; George Hicks, state director; Robert Pflug-Felder, Philadelphia secretary; William Beahm, Frank Dykes, Harry L. Stilwell, John Seibel, Harold Asquith, Henry Ford, John Nagele and J. Soehle.

Many Attend Conference at Pittsburgh

THE largest meeting ever held by the plumbing and heating industries of Pittsburgh, Pa., and the surrounding territory took place in that city on Thursday afternoon, July 12.

The various branches of the industry represented included manufacturers, wholesalers, master plumbers, both association members and non-members, Sanitary Plumbing and Heating League, Journeymen's Local 27, Steam Fitters Local 449, Pittsburgh Chapter of the National Association of Plumbing and Heating Salesmen, and salesmen who are not members of the National Association.

This meeting was brought about through the efforts of the Plumbing and Heating Industries' Bureau representative, D. C. Lindsay, for the purpose of outlining the new policies of the bureau and offering to the Pittsburgh district the opportunity of having a permanent bureau representative in the district in accordance with these new policies.

Mr. Lindsay in opening the meeting gave a summary of the work that he had done in the territory and the reasons for doing it. He stated that several months ago the Sanitary Plumbing and Heating League had got in touch with the bureau with the idea that it might be able to give them some help in solving the problems of the industry throughout the Pittsburgh territory. As a result, Mr. Lindsay was assigned to the territory where he has been ever since. In his investigation, Mr. Lindsay found out the sanitary conditions from the city authorities and reported these conditions at the various zone meetings which he has held. He found that these conditions could be remedied a great deal through the co-operative effort of all in the industry. He made a survey of advertising being done in the community and the Pittsburgh district and found out to what extent the trade was putting itself before the public.

Mr. Lindsay pointed out that there were some 573 registered plumbers and 14 heating contractors, who did a volume of business of 44 million dollars. During his stay in Pittsburgh he had talked to more than 1,500 people, 400 of whom were retailers and that the general opinion of all those talked to was that the time had arrived when something should be done. He pointed out that the bureau was better able to serve the trade today than ever before and that the three things he wanted to point out that the trade should consider were: advertising, sanitary conditions and the possibilities the territory offered.

Russell G. Creviston, general manager of the Plumbing and Heating Industries' Bureau defined the place the bureau held in the industry and pointed out that it was a trade association. It represents the approved and accepted method of handling common problems. The bureau has passed out of the experimental stage and is adequately financed today.

One year ago, the bureau changed its plan in reference to the operation of its field men. The policy now was to try and locate men permanently in trading areas who would be able to work directly and individually with the contractors and wholesalers.

The industry today has to create a greater demand for the material manufactured in our field, Mr. Creviston said. This is not the manufacturers' idea and he wanted this thoroughly understood. Conditions are such that the consumer has so many other things to spend his money for that, Mr. Creviston said, the industry must create a national acceptance and desire for more and better plumbing and this must be backed up locally. He

had found that there has been no effort made locally, not only there but in a great many places, to back up this national advertising.

There are three ways, he said, to increase the sale of plumbing and heating material: increase the number of users; increase the number of uses; and increase the use. He urged the industry to increase the number of users through advertising; to increase the uses through selling the idea of two bath rooms instead of one and to increase the use by promoting the bath a day idea instead of once a week. To do this, he suggested the need of an organization, and an advisory board which will work in connection with the district representative.

It is necessary to work out a definite program, Mr. Creviston said, and three things must be considered; cooperation with the national program, district program, and individual program.

After a discussion, Charles B. Nash, member of the Sanitary Plumbing and Heating League, stated that the object of this meeting, as far as he could see, was to accept or not accept the bureau's offer of a permanent man to be located in the Pittsburgh territory. With James Young, of the Fort Pitt Supply Co., as chairman, the question was voted on and it was unanimously decided that they wanted a permanent man in the Pittsburgh territory.

Mr. Creviston said the bureau was interested in helping every man regardless of whether he was a member of an association or an organization of any kind, as long as he was in the plumbing and heating business.

Mr. Nash explained the work of the Sanitary League, how it consisted of manufacturers, wholesalers, master plumbers and heating contractors, that it had existed for two years and that this meeting today was the outcome of the work it had been planning. A motion was made by Mr. Nash that when the advisory committee was selected, it consist of representatives from the entire territory represented at the meeting. This motion was passed.

Charles Lawrence of Local 27 asked if there was any reason why a member of both the Journeymen's local and Steamfitters local should not be represented on the advisory committee. His reason for wanting this representation was that he felt that these two locals were in better touch with conditions and had done more toward righting conditions in the territory than any other association. The motion was made by John Graham that the Journeymen's Local 27 and the Steamfitters Local 449 be represented on this committee. It was passed.

Considerable discussion followed as to number of men to be represented on the committee and what territories they should be picked from. It was left up to the various territories to decide for themselves who they wanted represented on this committee.

The meeting closed with a banquet. More than 250 people assembled at the William Penn hotel, the largest meeting of the industry that was ever held in the city of Pittsburgh. Verner E. Warren was chairman of the evening meeting, and talks pledging support to the movement and predicting its success were made by Dean Connelley of Carnegie Institute; James Young; Charles Lawrence, of local 27; John J. Sneider, president of the Pittsburgh Heating and Piping Contractors Association; Leo Green, secretary and treasurer of the Journeyman Steamfitters Local 449; Russell G. Creviston; James S. McVey, director of the Heating and Piping Contractors National Association; W. H. Rowswell, plumbing contractor from Mt. Lebanon, Pa.; and Harry Andrews of the Anchor Sanitary Co. and director of the Sanitary Plumbing and Heating League. An address on plumbing was given by Rev. Delber W. Clarke.

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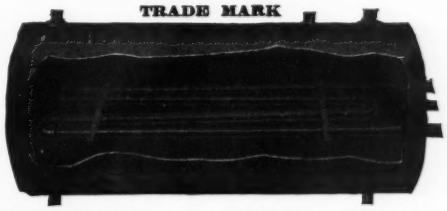

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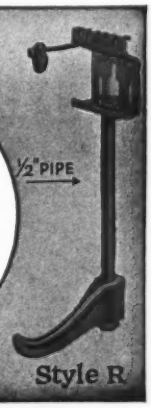

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FREDERICK E. FLADD CALLED BY DEATH

Frederick E. Fladd, vice president of the Mohawk Plumbing Supply Co., Inc., Rochester, N. Y., died at his home in that city on Wednesday morning, July 11, in his 57th year. Mr. Fladd was for many years engaged in the plumbing and heating contracting business in Rochester until two years ago, when he entered the supply business with the Mohawk Plumbing Supply Co.

As a master plumber he was for many years very active in association affairs, both local, state and national. He was a past president of the New York State Association of Master Plumbers and was for several years chairman of the educational committee of the National Association of Master Plumbers.

For a number of years he also was president of the plumbers' examining board in Rochester. Mr. Fladd was also a charter member of the Ampor club, an organization of members of the Associated Master Plumbers of Rochester. He also was interested in fraternal organizations having for many years been a member of the Masonic fraternity, the I. O. O. F. and the Elks. His widow, two sons, three daughters and two grandchildren survive him.

Funeral services were conducted at his late home on Friday afternoon, July 13, and were largely attended. In addition to the members of the Rochester local, large delegations were present from various cities of the state. Among others present were former national President Thomas F. Nolan and former national Secretary Frank F. Schimpf of Albany, N. Y.; former state presidents John E. Dugan of Albany, B. Jos. O'Donnell of Syracuse, George H. Drake and August Ebke of Buffalo, Alex. Auchinachie of Binghamton, Harry J. Bareham and Martin F. Utz of Rochester; and state President George Frank and state Secretary Henry J. Ritter of Buffalo. Others in attendance were past state Secretary Thomas J. Cronin and Charles Hakes of Binghamton; zone delegate Frank Rinehart, James F. Guider, Jerry L. Curran and James J. Dalton of Syracuse; Albion J. Eckert of Albany; past state Secretaries Louis J. Yauchzi, and Edward G. Snyder of Rochester, and Joseph A. Barr of Gates, N. Y., a past state director.

Frederick E. Fladd

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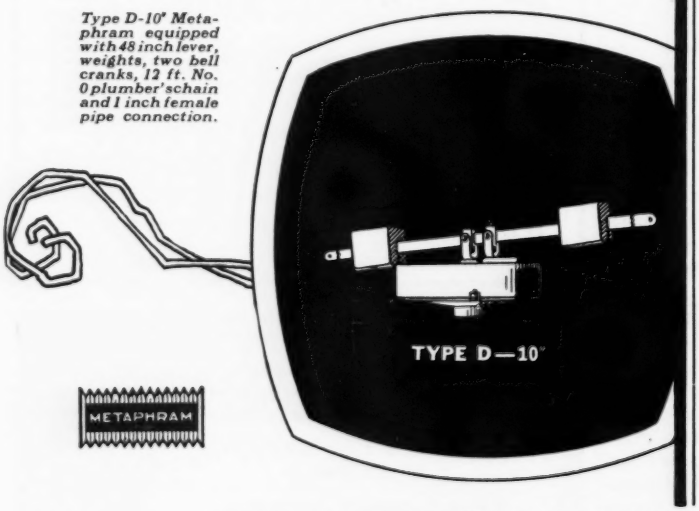

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Committee Co-operates With Government

N. A. M. P. Helps With Standardization Movement; Chairman Drake Reports to Convention

YOUR Standardization Committee submits the following report of its work since the 45th annual convention held in Minneapolis in June, 1927.

The Division of Simplified Practice of the Department of Commerce, and the American Engineering Standards Committee have been quite active during the past year, and there have been a number of meetings of various committees considering the question of both simplification and standardization of plumbing materials and installations, and the final committee meeting was held by the Division of Simplified Practice in Washington, only last week.

Your Standardization Committee has been represented at all the meetings of which they were notified, and we trust that the actions taken by your representatives will meet with your approval.

The only conference held by the Division of Simplified Practice, of which we were not notified, was held in Washington on January 10th and 11th, and was a meeting of the manufacturers of hospital plumbing fixtures made of porcelain ware and vitreous china, and it is my understanding that it was simply a conference of manufacturers and users of hospital plumbing equipment.

George H. Drake
Chairman of the standardization committee of the National Association of Master Plumbers

I understand that a meeting is to be called later, with reference to plumbers' brass work especially adaptable to hospital purposes, and as soon as the preliminary work has been completed, I assume that all interested parties will be called into conference, as has been done on the different subjects which have been considered heretofore.

The Advisory Committee on Range Boilers and Expansion Tanks, held a meeting in New York City, on April 18th, in the offices of the American Gas Association, and R. T. Rock, representing the National Association of Master Plumbers, was present as a member of this committee.

The reconsideration of Simplified Practice Recommendation No. 8 was brought up for action, as requested in Resolution No. 18, passed at our 45th annual convention at Minneapolis, June 21, 1927, as follows:

RESOLUTION: That this body go on record as approving the addition of two more one-inch tappings on all range boilers to be located respectively at eighteen inches and twenty-four inches from the bottom edge of the boiler shell and in line with the present side tappings.

The chairman of meeting, H. R. Colwell, of the Division of Simplified Practice, stated that during the past year a demand has developed from the Gas Association and manufacturers of thermo control valves, as well as the request of the Master Plumbers' Association for reconsideration as embodied in our resolution, also sizes and capacity of range boilers.

The representatives of the Gas Association were very much in favor of changing the present measurements of the 30-gallon boiler sixty inches by twelve inches (60″x12″) to a shorter boiler measuring fourteen inches by forty-eight inches (14″x48″) as tests of heating efficiency by gas proved more satisfactory and economical. This suggestion was very much opposed by the Boiler Manufacturers and your representatives and the motion for adoption of change was lost.

A survey conducted by the Division of Simplified Practice served as a basis of discussion and in view of the extremely high degree of adherence to range boilers (96.37%) as well as expansion tanks (99.37%) it was the unanimous opinion of those present that the standards remain without change.

The chairman then opened up the discussion as to the advisability of incorporating, in a revised edition of this recommendation, a provision for two additional side tappings in range boilers. All phases of the practicability of such a procedure were gone into in every detail, and discussed by the various representatives in attendance covering our resolution No. 18, which voiced the sentiment of the plumbing interests, to the effect that two additional side tappings should be provided for in the fabrication of range boilers.

The deliberation on the subject of tappings came to a close upon the adoption of a motion, as follows:

"The demand for range boilers with four side tappings being insufficient at this time to be recognized as a standard, and the conference desiring to take cognizance of the resolution of the National Association of Master Plumbers, the manufacturers will recognize orders for range boilers with four side tappings and when so supplied the side tappings shall be placed in line in the side at six, eighteen and twenty-six inches from the bottom and six inches from the top."

This resolution is to be incorporated in the present recommendation (following table No. 2), and blue prints are to be supplied to the Department showing the exact location of the tappings, and the types of installation incident thereto. A request that the charts in recommendation No. 8, be changed to meet up-to-date installation was adopted, and the Department will submit substitute blue prints to the manufacturers for their approval before printing.

A motion was made and seconded that the Division of Simplified Practice use its good offices in securing a meeting of gas water heater manufacturers and gas water heater shell manufacturers, with a view to working out some standards in the interest of the industry as a whole,

MISSOURI

Top row: J. O'Shea, Miss Archibald, T. F. Durkin and G. H. Hamilton, all of St. Louis. Middle row: Edw. Monteath of St. Louis, state secretary; E. J. Blake, secretary of the St. Louis association; William Ball, president of the Kansas City association. Bottom row: F. L. Wetzel, J. Smith, H. Eddinger and A. A. Steinhoff, all of St. Louis, at Memphis convention

and that a preliminary meeting be called within the next two months and prepare an agenda which can be presented at a general conference to be held in Atlantic City in October, coincident with the American Gas Association.

Representatives of the copper boiler manufacturers present, also requested the chairman of division, H. R. Colwell, to use his good offices in arranging a meeting of their industry in the interest of simplification of types and capacities. The necessary procedure to accomplish this end was worked out by the representatives present and the division is to make the necessary arrangements to bring this about.

A meeting of the advisory committee on staple vitreous china plumbing fixtures, was held in Washington, at the Department of Commerce Building, during the latter part of April, and they reaffirmed the existing schedule, Simplified Practice Recommendation No. 52, without change for a period of one year.

Information presented at the committee meeting indicated a very satisfactory degree of adherence to this recommendation.

The representatives of the Division of Simplified Practice congratulated the industry on the success of its waste elimination efforts thus far, and urged a continuance of their active support of the work.

The Bureau of Standards has issued a call for a general conference of producers, distributors, and consumers at 10 a.m. Friday, June 29, 1928, in room 704 Commerce Building, Washington, D. C., to consider the establishment of commercial standards for steel and wrought iron pipe nipples.

We have examined the proposed standards to be used for a basis for discussion and the only change of any consequence, from present methods, is the addition of a "special short" length in a few sizes, which in our opinion, will be a benefit to the plumbing industry, should they be approved.

It is not considered necessary by your standardization committee to have a representative present at this conference.

There have been two meetings of the sub-committee on plumbing, to consider the revision of the code, Recommended Minimum Requirements for Plumbing.

The first meeting was held in February and the second in May. Mr. Hanley who is a member of this committee, was unable to be present at either meeting, and I was a guest at the meeting held in Washington, May 14th and 15th, at which three members of the committee were present; Mr. Groeniger, Mr. Carson, and Mr. Hansen. Mr. Groeniger presided as acting chairman.

Since the publication of the Recommended Requirements for Plumbing, the chairman of the committee, Professor Whipple, of the Massachusetts Institute of Technology, has passed away, and the committee feels very keenly the loss of his experience and advice. The Department has not yet appointed a man to fill the vacancy.

The purpose of these meetings of the sub-committee was, to consider criticism of some of the sections of the printed code that had been received by the Department of Commerce, and to receive reports from Dr. Hunter of the United States Bureau of Standards, who has been making tests of pipe sizes for soil and vent stacks and drainage lines, in both laboratory experiments and actual installations.

One series of tests was made in the Cleveland public schools during the time that the school was in session, and the plumbing in full service and regular use, another test was made in the Department of Commerce Building, which was run for two days during the full working hours from 8 a.m. to 5 p.m. A survey was also made in New York City, covering a number of buildings (I believe it was 27), for which complete plans of the plumbing were available, and these buildings had been in service and regular use for periods ranging from 1 to 12 years. These buildings varied in size and type and were used for a number of different purposes. The reports on these tests and surveys are very interesting and the committee expects to have them published in the appendix section of the revised issue of the code. As a result of these tests and surveys the committee feels justified in revising the pipe sizes in the code, as well as some of the methods of installation, which will make the revised code applicable to large as well as small buildings.

The research work that has been done by the Bureau seems to indicate that pipe sizes, in the older codes, now in use by various cities, are, as a rule, very much in excess of requirements for large buildings.

Records of the Department of Commerce show that a number of states, some of which are: Maine, Iowa, Indiana, Illinois, Florida, North Carolina, and Virginia and between 60 or 70 cities have accepted, in whole or in part, the present Recommended Minimum Requirements for Plumbing, from which the plumbing code for the city or state has been made.

The proposed revision of the present code will be submitted to the National Building Code Committee for its consideration, in the near future, and if it is approved by them will be reprinted and ready for distribution possibly early in the fall.

In order that the Bureau of Standards may be able to continue its experimental work, we believe that our National Association should support the request of the Division of Simplified Practice for the necessary funds to carry on the research work, and your committee recommend the adoption of the following resolution:

"WHEREAS, the Sub-Committee on Plumbing of the Building Code Committee was given a limited work to accomplish on 'dwellings and similar buildings' only, and,

"WHEREAS, the Sub-Committee is now faced with the task of supplying data applicable to tall buildings, or so-called 'skyscraper' construction, and,

"WHEREAS, Investigations must be undertaken to obtain the peak load data on drainage systems of high buildings, therefore:

"BE IT RESOLVED: That it is the sense of the National Association of Master Plumbers in convention assembled, that an experimental program for the purposes of obtaining such data as advisable would result in significant saving in the design of plumbing systems throughout the country, it is recommended to the Department of Commerce that funds be appropriated by the Government to carry forward such a program by the Bureau of Standards, and

"BE IT FURTHER RESOLVED: That a copy of this resolution be forwarded to the secretary of the Department of Commerce, Washington, D. C."

Under date of May 31, the Department of Commerce sent out a notice to the producers, distributors, and consumers of porcelain (all-clay) plumbing fixtures, stating that there would be a general conference on Tuesday, June 12, in the Commerce Building, at Washington, D. C., to consider the adoption of a commercial standard for staple porcelain (all-clay) plumbing fixtures, as recommended by the advisory committee.

The meeting was held as scheduled on Tuesday, June 12, in Washington, D. C., and those in attendance were representatives of the manufacturers, American Institute of Architects, National Association of Master Plumbers, Associated General Contractors of America, American Home Economics Association, Supervising Architect, United States Treasury Department, Department of Agriculture, Panama Canal, Department of the Interior, Bureau of Standards, Bureau of Foreign and Domestic Commerce, and the Department of Simplified Practice. There was also present a representative of St. Elizabeth's Hospital, Washington, D. C., and representatives of the trade press, as follows:

Brady, J. F., Plumbers Trade Journal of New York City.
Drake, George H., Buffalo, National Association of Master Plumbers.
Edwards, Miss Alice L., American Home Economics Association, Washington, D. C.
Foos, I. D., Ceramic Industry, Washington, D. C.

Top row: Mr. and Mrs. E. F. Ritterhoff, John J. McCue of St. Louis. Bottom row: Mrs. C. V. Quinn of St. Louis; J. P. Struck, Wolverine Brass Works, Dallas, Tex.; R. L. Parnell, Wolverine Brass Works, Charlotte, N. C.—Photos taken at the recent Memphis convention

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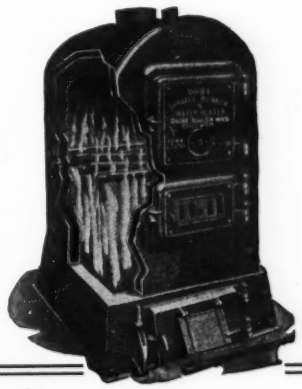

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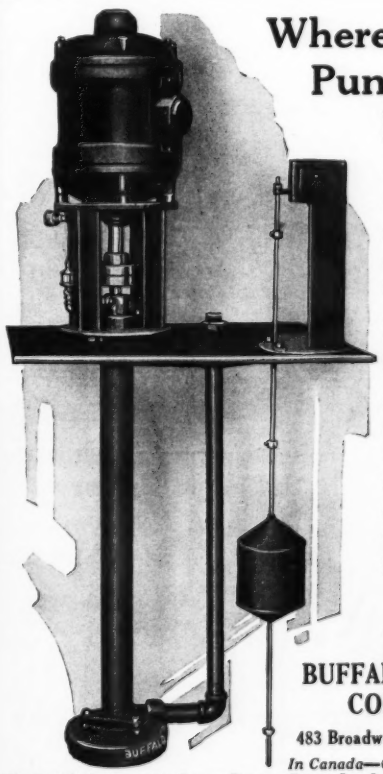

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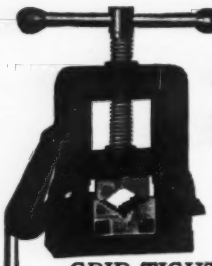

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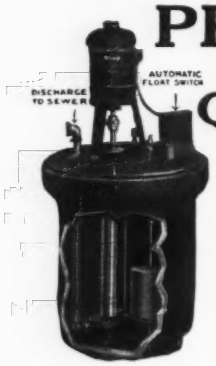

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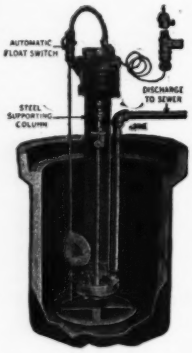

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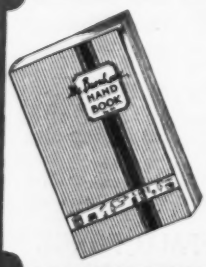

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Furlong, Peter J., Supervising Architect, U. S. Treasury Department, Washington, D. C.
Hansen, Abel, Fords Porcelain Works, Perth Amboy, N. J.
Harvey, Charles D., Department of Agriculture, Washington, D. C.
Hoffman, George E., The Trenton Potteries Co., Trenton, N. J.
Kern, LeRoy E., American Institute of Architects, New York, N. Y.
Kreger, John M., Woodbridge Ceramic Corp., Woodbridge, N. J.
Maginnis, E. A., Standard Sanitary Mfg. Co., Washington, D. C.
Mitchell, A. R., Beaver Refrigerator & Potteries Co., New Brighton, Pa.
Parr, J. R., General Ceramics Co., New York, N. Y.
Probst, Louis, J. L. Mott Co., Inc., Trenton, N. J.
Ramage, James E., Domestic Engineering, Chicago, Ill.
Sawyer, D. H., Associated General Contractors of America, Washington, D. C.
Snyder, C. B., St. Elizabeth Hospital, Washington, D. C.
Stackhouse, Clifton C., The Panama Canal, Washington, D. C.
Weisbrod, E. Harry, Department of Interior, Washington, D. C.
Wray, G. W., Bureau of Standards, Washington, D. C.

DEPARTMENT OF COMMERCE:

Bletz, M. H., chief, Standard Section, Bureau of Foreign and Domestic Commerce.
Fairchild, I. J., Commercial Standards Unit, Bureau of Standards.
Tillman, S. F., Division of Simplified Practice, Bureau of Standards.

The meeting was called to order by I. J. Fairchild, rep-

PENNSYLVANIA
Top row: F. W. Behler and H. E. Weigel, both of York; David S. Sanderson of Drexel Hill, state vice president. Middle row: Harry W. Hammersla of Harrisburg; A. D. Scheere and H. K. Browning, both of Pittsburgh. Bottom row: C. H. Kramer and E. D. Swoyer, both of Allentown; George F. Uber of Philadelphia, a charter member of the national association, at Memphis convention

resenting the Department of Commerce, Bureau of Standards, who gave a brief outline of the procedure for the establishment of commercial standards, and introduced George E. Hoffman of the Trenton Potteries Company, who presented the recommendations of the advisory committee for adoption as standard.

Mr. Hoffman acted as chairman of the conference and the proposed commercial standard was fully explained, and the various items taken up in detail. There were some revisions suggested and the recommended standards were approved as revised.

It was decided that the effective dates for production should be July 1, 1929, and the clearance of existing stocks January 1, 1930.

The question was asked by the representatives of the Department of Commerce, "Shall certification plan be used?" and it was decided by those representing the manufacturers that it should be. The certification plan is the method adopted by the Department for listing all manufacturers, who adhere to the simplified practice recommendations, in all of the industries. It was also decided that the revision interval should occur annually after July 1, 1929, and a standing committee for this purpose was appointed, consisting of representatives of the manufacturers, distributors, architects, and master plumbers.

Those selected to act on the committee are as follows:

Manufacturers: George E. Hoffman, Trenton Potteries Co.; Abel Hansen, Perth Amboy, N. J.

Distributors: W. J. Spillane, Chicago; C. W. Fell, Buffalo; Benj. Cadbury, Philadelphia; George Kumpf, New York City.

American Institute of Architects: LeRoy E. Kern, New York City.

National Association of Master plumbers: George H. Drake, Buffalo; R. T. Rock, Bridgeport, Conn.

Department of Commerce: I. J. Fairchild, Commercial Standards Unit, Bureau of Standards.

The advisory committee, together with the Department of Commerce, Bureau of Standards, have been working on the subject for something over a year, and their survey of the situation shows that the manufacturers of porcelain sinks, laundry trays, combination sink and tray, lavatories, baths, receptors, and stall urinals, have a total variety of types or designs of Six Hundred Twenty-two (622). The proposed standard approved at the conference has reduced the variety to a total of Eighty-seven (87), or approximately Eighty-six per cent (86 per cent) reduction.

This Commercial Standard, as approved, covers only types and sizes of urinals, sinks, laundry trays, lavatories, receptors and baths, and fixtures of these kinds which do not comply with the description and dimensions referred to in this standard are considered as special.

There were some discussions on the so-called "special selection" earthenware, and it was stated by Mr. Hoffman that they were in hopes it could be eliminated, and he urged that the manufacturers discontinue it. In this recommendation he was strongly supported by Mr. Kern of the American Institute of Architects, and myself.

Miss Alice L. Edwards, representing the American Home Economics Association, made a special request of the manufacturers that they revise the pattern of laundry trays so that the bottom will be raised up to a higher level, and during the discussion it developed that this question was being given consideration, and the manufacturers hoped that within the near future the design of laundry trays will be changed. Just before the adjournment of the meeting, Mr. Fairchild stated that the Depart-

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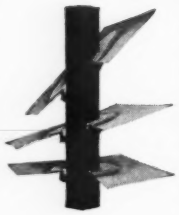

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ment would have all of the revisions made, and copies would be sent to the committee for approval, after which they would be printed in pamphlet form, and he hoped that they would be ready for distribution early in the fall.

The question of standardization of plumbing equipment is now being considered by the American Engineering Standards Committee, and I attended a meeting arranged for by this committee and called by George C. Hecker, chairman of the special committee to which this question was referred.

There was present at this meeting, George C. Hecker, chairman; C. B. LePage of the American Society of Mechanical Engineers; LeRoy E. Kern of the American Institute of Architects; Percy Owens of the National Association of Building Owners and Managers; W. C. Groeniger of the American Society of Sanitary Engineering; W. S. Timmis, Heating and Piping Contractors National Association; W. G. Schneider of the National Association of Brass Manufacturers; F. J. Schlink of the American Engineering Standards Committee, and George H. Drake of the National Association of Master Plumbers.

The committee was advised that its principal duties would be to recommend to the American Engineering Standards Committee:

1. Whether or not the work should go forward under the auspices of the American Engineering Standards Committee.
2. If so, what its scope shall be.
3. How the work should be organized.
4. How it is to be related to any other work having an important bearing on it.

The committee was also instructed that if it decided that the work should go forward it should recommend the organization or organizations to serve as a sponsor or joint sponsors respectively.

The work of the committee was begun by correspondence and an attempt made to hold a meeting on May 20, 1927. It was found, however, that it would not be possible for some of the most vitally interested organizations to be represented on that date. Consequently, the meeting was postponed and the work carried on further by correspondence.

The committee finally met in New York City on July 8, and discussed the several phases of its assignment.

1. Whether or not the work should go forward under the auspices of the American Engineering Standards Committee.

The committee believed that before this question could be answered it would have to decide the more general question of whether or not there should be standardization in the equipment field. Discussion by the members indicated that except for certain simplified practice recommendations and work done by the standards committees of several national organizations there had been comparatively little standardization and that it is difficult and expensive to get renewal parts and to interchange equipment.

There was also a discussion concerning the advantages to be gained by standardizing the so-called roughing-in dimensions.

The discussion led inevitably to the conclusion that standardization of plumbing equipment was highly desirable and that the American Engineering Standards Committee is the logical organization through which to carry forward such a standardization program.

The committee recommended that standardization of plumbing equipment be undertaken under the auspices of the American Engineering Standards Committee.

2. The question of scope was discussed at considerable length due to the number of industries involved and the multitude of items which might be considered for stand-

ardization, the committee was unable to prepare a detailed statement which would definitely outline the scope.

The committee concluded that a rather general scope statement would serve the purpose in launching the project and that the details could be handled best by a steering committee to be organized by the sponsors.

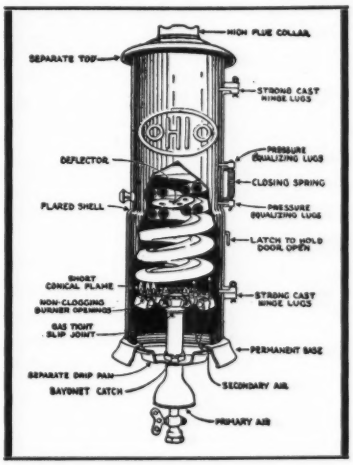
The committee, realizing the magnitude and complexity of the problem, does not at this time desire to limit the scope, but recommends that the working out of details be left to such sectional committee or committees as may be appointed. However, it is believed that the scope should cover standardizations of plumbing equipment including materials, uniformity of roughing-in dimensions, efficiency of operations and other performance specifications. Attention of the sectional committee or committees should be called to the necessity of meeting established codes, regulations or ordinances.

3. The question of how the work should be organized was given very careful consideration. Obviously this involves the question of sponsorship. It was felt by some members of the committee that in organizing the work there should be selected a few of the more simple commodities in which the problems of standardization would be comparatively simple. As an example of this we cite the item "Faucets." It is believed that by starting out with a few such products suitable progress might be made which would open the way for further standardization among the more elaborate and complex commodities.

The conclusions reached were that the American Society of Mechanical Engineers and the American Society of Sanitary Engineering should be given joint sponsorship for the project and that the sponsors be urged to organize a representative steering committee of manufacturers and consumers to assist in the organization work and in the guidance of the program particularly through its initial stages.

PENNSYLVANIA

Top row: Chris Troutwine of York, past state president; Chris Bachofer of Reading, secretary of the state association; Jacob Soffel of Pittsburgh. Middle row: Miss J. L. Reardon of Pittsburgh; Mrs. A. C. Good of Wilkinsburg; Mrs. John A. Quinn of Philadelphia; John A. Quinn, national vice president. Bottom row: Harry Stilwell, M. J. Feeney, local president, and G. M. Hicks, all of Philadelphia; Mrs. F. W. Behler and Mrs. Harvey Weigel, both of New York, at Memphis convention



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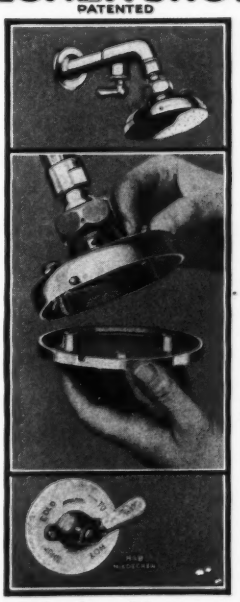

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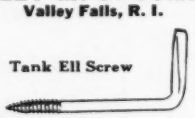

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Recommendations: That the American Society of Mechanical Engineers and the American Society of Sanitary Engineers be designated joint sponsors with the suggestion that a representative steering committee be organized to act in an advisory capacity during the organization and initial stages of the project.

4. Relation to other work.—The committee discussed the work done under the auspices of the Division of Simplified Practice. It was agreed that this was an exceedingly valuable piece of work. The discussion indicated also that certain trade associations had made some progress in standardization work and that there were already available some fairly well recognized standards.

The committee concluded, in view of the close relationship between simplification and standardization, that there should be close co-operation with the Division of Simplified Practice and also with any other national organizations in the plumbing equipment field, in order that advantage might be taken of any standardization work already completed or under way.

It is recommended that the sponsor body or bodies be instructed to co-operate closely with the Division of Simplified Practice and with all national organizations in the plumbing equipment field in order that the duplication of effort may be avoided and that advantage may be taken of all standards already developed or standardization work under way.

The American Engineering Standards Committee is also considering other matters pertaining to plumbing material, and at the request of the committee, President Nolan appointed R. T. Rock of Bridgeport, Conn., a member of our standardization committee, to represent the National Association of Master Plumbers on a sub-committee which has been appointed to consider the question of standardizing pipe threads.

This has only recently been taken up by the American Engineering Standards Committee, and the committee has taken no action as yet.

The 1928 edition of Sweet's Architectural Catalogue carries a two page reproduction of the plumbing symbols as adopted at the 1925 convention held in Portland, Oregon, and the National office has authorized a contract with Sweet's to have them carried in the 1929 edition. Advance prints of the plumbing symbols, as published, were mailed to over 7,000 architects and engineers early in September, 1927. There was delay in getting the prints mailed because of the questions raised by several interested organizations, and after a conference with Mr. Kern of the American Institute of Architects, and some correspondence with Mr. Foote of the Division of Simplified Practice, we arranged to have a letter accompany the prints and a red line printed across the bottom of the title page asking for criticism and comment. At the same time that these prints were mailed out, request was made of the American Engineering Standards Committee, to take necessary steps to have the symbols approved and adopted as standards, and this application has been accepted and referred to the sectional committee on standards for drawings and drafting room practice, and this committee in turn has referred a part of our proposal to the sectional committee on "identification of piping systems."

We believe that this sectional committee and its subcommittees will have revised and simplified the symbols so as to overcome a large percentage of the criticism made by architects, before the 1929 edition of Sweet's goes to press, so that the revision will be shown.

The assistance of Alex Coleman of San Francisco, in having the symbols criticized was very much appreciated, and a committee of the San Francisco chapter of the American Institute of Architects, with E. L. Norberg as chairman, have made a very careful study of the symbols,

and their criticism and suggested changes have been a great help in simplifying them. The closing paragraph of Mr. Norberg's letter says, "Your general scheme is certainly the correct thing, and with a bit of simplification it will be a great help to the architects and contractors."

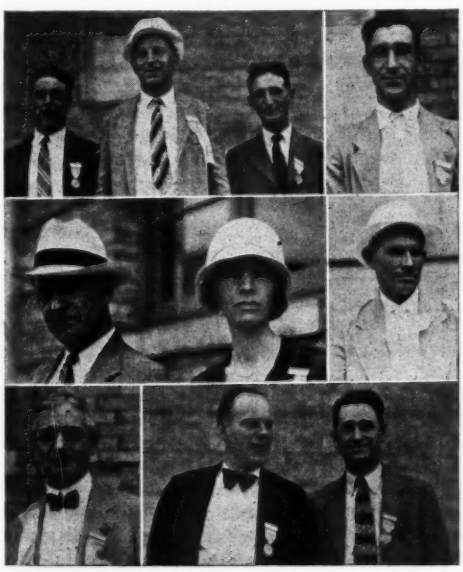
We, at this time, also wish to thank Albert Hart Hopkins, secretary of the Buffalo chapter of the American Institute of Architects, for his suggestions and valuable assistance in having the necessary drafting of the revised symbols done in his office.

The committee very much appreciates the splendid cooperation of the trade press in publishing the proposed symbols and forwarding to the committee the letters of criticism which they received, and we wish to assure them that their publication was of considerable assistance to the committee.

As a member of the sectional committee on standards for drawings and drafting room practice, I have been appointed chairman of sub-committee No. 6, graphical symbols on drawings, and this committee held a meeting in Pittsburgh, Pennsylvania, on May 16. This meeting was in the nature of an organization meeting, and there were only two sets of symbols before the committee for consideration—the proposed plumbing symbols submitted by the National Association of Master Plumbers, and the electric transformer symbols presented by Mr. Harris of the Westinghouse Electric & Mfg. Co.

We have considerable constructive criticism on the proposed plumbing symbols, the principal part of it being that the symbols as originally proposed require too much work in the drafting room, and suggestions made that they be simplified. This is now being worked out, and revised prints will be submitted to those who have been kind enough to make suggestions, asking for further criticism or approval.

At the Minneapolis convention, resolution No. 8, heat-



TENNESSEE

Top row: L. D. Lingner of Nashville; D. L. Simpson of Memphis; P. J. Nolan of Nashville; Wallace Seat of Newbern. Middle row: Mr. and Mrs. C. W. Whitaker of Chattanooga; R. H. Lloyd of Memphis, chairman of the boat committee. Bottom row: James L. Evans; L. S. Masters of the R. T. Clarkson Co.; L. H. Carter of the N. O. Nelson Mfg. Co., all of Memphis, at Memphis convention

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Ireland & Matthews Mfg. Co., Detroit, Mich.
M. S. Little Mfg. Co., Hartford, Conn.
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ing boiler ratings, was referred to the standardization committee by the board of directors as recommended by the resolutions committee, and upon investigation we find that this subject has been studied thoroughly by the boiler output committee of the Heating and Piping Contractors National Association, and also a special committee of the American Society of Heating and Ventilating Engineers. Both of these committees have had a conference with the Boiler and Radiator Manufacturers.

This work has developed a method of testing, and standard charts for showing, the performance of boilers under different firing periods, and we believe that everything possible is being done, at this time, to solve the problem, and that the appearance of another organization asking for a different brand of rating or test will simply complicate the situation and put off the day of final solution.

The full report of the boiler output committee was published in the Heating and Piping Contractors National Association "Official Bulletin" in the July, 1927, issue, it was also published in the trade press, and undoubtedly most of our members have read it.

I have received from the Government, through the attorneys, Murray & Zugelter, of Cincinnati, Ohio, trademark certificate No. 233,092, which covers the copyrighting of the emblem of quality, or seal, and we believe, that it was the intention to have this seal used for trade promotion purposes, and that these papers should be turned over to the trade extension committee for that purpose, and recommend that the standardization committee be authorized so to do.

After a careful study of the situation with reference to plumbing standards, and from the facts set forth in this report, we believe, that the work of the national standardization committee, in the future, will not be so much an introduction of new ideas for standardization, but an effort to keep other interests from offering suggestions for plumbing standards, of such a nature, as to be a detriment to the master plumbers, and we recommend that the new committee, to be appointed, study the question very carefully with this end in view.

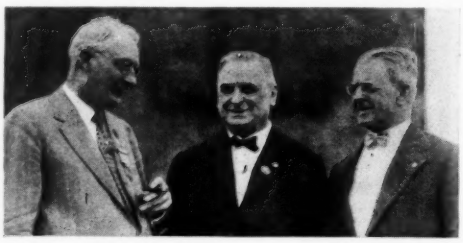
Respectfully submitted,
George H. Drake,
Chairman, Standardization Committee.

Affirm Trade Relations Policy

Convention Hears Report of Newest Committee

IN SUBMITTING this, the annual report of your Trade Relations Committee, we affirm an earnest effort for consistency in our labors for the advancement of our craft during the past twelve months—ever mindful of a wonderful leadership that has guided the destiny of our National Association for nearly half a century with consummate skill and dignity—uplifting our craft from a menial position in the business world to one foremost in building construction—advancing its product from a classification of luxury to one of necessity demanded by people in every walk of life.

We further affirm an earnest effort toward a strictly up-right, open and above board policy avoiding sensationalism in every duty performed as well as in those recommendations prepared for your consideration, believing that it is the only policy that will benefit us who are wanderers in the wilderness of business adjustment striving to provide a perfect stabilization of our industry that will permit us to earn a respectable living for our families, transact business in universal harmony with all people and maintain our place in society as progressive and ever-worth citizens.



TRADE RELATIONS COMMITTEE
A. C. Eynon of Canton, E. D. Hornbrook of Kansas City, Mo., chairman, and Frank B. Lasette of New York City

Believing then, that schemes of force are parents of discord and that our way must be the Golden Rule supplemented by proper national, state and city laws, we submit the following for your consideration:

In our 1927 report we made suggestions and recommendations touching on the operation of the Plumbing and Heating Industries Bureau, viz.:

We endorsed the $500,000 campaign, as outlined by the Plumbing and Heating Industries Bureau, and recommended how part of it should be applied for the direct benefit of the master plumber. We further approved the action of the Plumbing and Heating Industries Bureau in national advertising, extending field service men, lecture zoning, extending apprenticeship department, creating a women's department to work with Women's National Auxiliary; certain form of application for membership in the Plumbing and Heating Industries Bureau; that all reference to the "Merchant Plumber Only" policy be dropped; selling plumbing and heating on the installment plan as an associative measure to receive no consideration or endorsement.

In view of the recognition extended the above suggestions and recommendations on the Plumbing and Heating Industries Bureau, your national president decreed that the best interests of our membership would be served by appointing the three members of the Trade Relations Committee as representatives of the National Association of Master Plumbers on the board of directors of the Plumbing and Heating Industries Bureau.

Serving then, in this dual capacity we report that every recommendation and suggestion in our report of 1927 to the bureau has been accepted and become the working policy of this progressive institution now working under a new program.

Your committee views this effort as a real stride toward a better understanding with all interests in the industry, if our master plumber will only support, encourage and develop himself accordingly.

When we carefully analyze the above as now accepted by all the interests in our business, we can quickly visualize the broadened field of endeavor and the master plumber should obligate himself to follow all demands

upon him in this new enterprise as a part in it and insist that others having a part should do likewise.

In the month of December, 1927, it was decided by your committee to prepare a guide for talks before State Conventions.

To this end, the Guide was labeled "Suggestions for Talk by Representatives of the National Association of Master Plumbers before State Annual Conventions."

Our attention was to call attention of our members to the fundamentals of the association and this much cannot be told too often to so large a membership as that of the master plumbers.

How well these "Standardized Talks" were received, the Committee will let you answer.

Business in general has entered a new epoch that needs our best thought. We must equip ourselves to meet the new conditions as individuals, as an association and as an industry. We offer the following trends in business for your discussion that all may have the benefit of mature thought to guide our future welfare.

First.—Mergers of large corporations—what will it mean to our industry and the master plumbers?

Second.—That the manufacturer is rapidly becoming the agency from whom all heating and plumbing materials will be purchased.

Third.—The establishment of branch and chain stores in every city showing growth.

Fourth.—Hardware and department stores are placing on their shelves and in elaborate window display and advertising, every article possible to sell in the plumbing line that require no skill to install.

Fifth.—The method of intensive selling by direct contact with consumer.

Sixth.—The installment plan of selling—persuading the consumers to purchase beyond their means.

Seventh.—The encroachment of the general contractor upon the plumbing and heating contractor.

Eighth.—Every master plumber apparently, is working overtime to out-do his competitor in price with overhead and profit disregarded.

Ninth.—Contract Price Guessing vs. Intelligent Estimating of Actual Costs plus a Profit. Which method betters your chances for increased business showing a living profit?

Industrial America at present is volume mad in production. But manufacturers will have to face ultimately, the economic law of supply and demand as their guide for the operation of their industry.

The manufacturer should voluntarily curtail production as his contribution toward restoring the market to a balance.

They permitted themselves to become so absorbed in production that they lost sight of the economic law of supply and demand.

With the over-supply of material for present day requirements, an endeavor is being made for an extended market, for better sanitation in neglected homes in both urban and rural districts.

We believe this to be practical and heartily concur in the endeavor, as a health measure for the people who lack sanitary appliances in homes.

Economic warfare is no less destructive of dollars than the battling of armies.

Estimating is an unknown quantity, and the careless methods of our members in compiling estimate which is a financial risk, and we pray that a closer study be made and all estimates rechecked before submitting a bid, then you will be positive as to the actual cost to furnish and install plumbing and heating systems, and not be influenced by offers for acceptance by unfair business methods.

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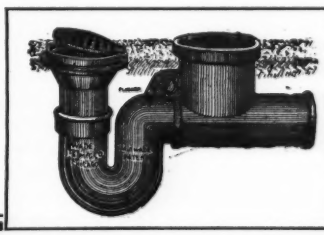

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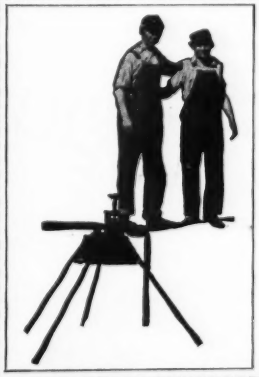

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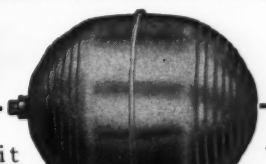

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Whether the wholesaler acknowledges it or not—whether he realizes it or not—he has created a competition that has brought chaos to our branch of the industry and insolvency to many. His pernicious custom of extending credit and selling on guarantees has brought many into the business, lacking business qualifications.

There are twelve thousand master plumbers in the National Association scattered throughout the United States and living among the one hundred and twenty millions of people that comprise the nation. Have we been successful in stabilizing the plumbing and heating industries by association contact of the retailers?

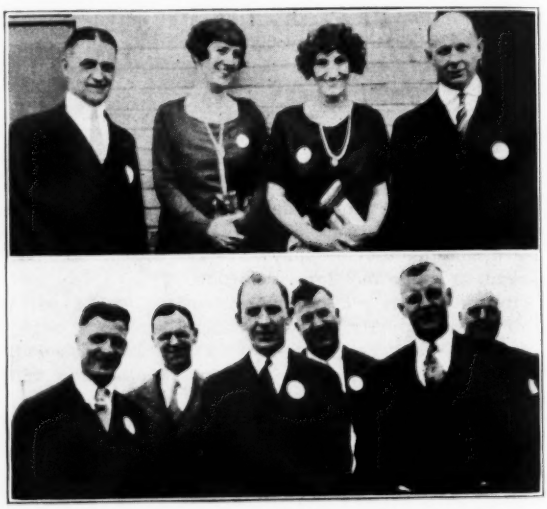
We believe that we have up to this time, and the evidence we offer to support the statement is the fortunate conditions existing so far as non-merging of big corporations in manufacturing our materials, the absence of branch or chain retail stores in our cities and the plan of installment selling to the consumer kept at a minimum.

But how about the immediate future? Can Twelve Thousand retailers continue to guide the destiny along present lines? Or, must we give ourselves over to the new order of intensive, forced selling of our wares and service to the public and maintain the same standard of quality in materials and installation for the protection of the public's health?

Educate yourselves in true business ethics and management—apply the Golden Rule—place intelligence in business above craftiness and dishonor, for the power to succeed, to grow, to firmly anchor the master plumber as a business man—accepted by society as an integral part of it, lies in the wisdom displayed by the master plumber.

Our hope lies in the one great fact that we are Twelve Thousand master plumbers, affiliated in one grand fellowship, eager to know and to do, with due equity to all, that which is honorable and justifiable in the course of proper business achievements. With this fellowship—honesty of purpose—pride in membership—pride in worthy citizenship sold to our membership and they acting in accord, should bring success to the industry.

Submitted by the Committee,
Frank B. Lasette, A. C. Eynon, E. D. Hornbrook,
Chairman.



Top picture: Mr. and Mrs. George Kerr of Newton, Mrs. and Mr. J. Burke of Newton.—Bottom picture, back row: E. F. Whitmarsh of Taunton, M. E. Greenleaf of New Bedford, E. N. Coggeshall of Westport Harbor.—Front row: Fred Robinson, Alexander Pate and Harry Mulberry, all of New Bedford.—Photos taken at the recent convention of the Massachusetts State Association of Master Plumbers

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HARTFORD CONN.

THE M S Little MANUFACTURING COMPANY HARTFORD CONN.

Woman's Page

Women today are entering many fields in which, not so long ago, their presence would have seemed strange, or even impossible. One of these is the field of aviation. Today the country is celebrating the feat of Miss Amelia Earhart, the first woman to fly across the ocean. Aviation is a new field and already women are entering it. So, too, in the industries—such as plumbing and heating—which have been longer established, woman is finding a place.

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Thanks for Co-operation

Editor, "Domestic Engineering":—Would you kindly express through the columns of your valued paper the deep appreciation we feel for the splendid co-operation given us and the many courtesies extended National Women's Auxiliary in helping to make our booth at the exhibit building in Memphis a success?

We wish to thank:

Mr. Thos. F. Nolan and the National Association of Master Plumbers for the very generous space allotted us for our booth.

The Memphis Master Plumbers' Association and ladies of the auxiliary for their splendid co-operation.

The Memphis Chamber of Commerce. The Bridgeport Brass Co. for copies of "The History of Sanitation." Crane Co. for its booklet "Planning the Small Bath Room."

"Domestic Engineering" for copies of "The Story of the Bath," all of which were distributed from our booth.

The Plumbers' Trade Journal for the splendid likeness of our beloved national president, Mrs. E. D. Hornbrook.

The Florida master plumbers for the appropriation which purchased Florida symbols and made the booth more typical of the southland.

And the members of the Florida Division W. A., who contributed so generously.

Sincerely yours,

(Signed) Mrs. W. E. McAndrew, 2nd Vice President of the Women's Auxiliary to the N. A. M. P.

Tampa, Florida.

Year Book of Kansas City Auxiliary

Some of the larger auxiliaries have found that a printed yearbook is a great convenience, and that when the name of the hostess for each meeting is given it avoids possible confusion. One of the most attractive yearbooks prepared by the auxiliaries is that of the Women's Auxiliary to the Master Plumbers' Association of Kansas City, Mo., for 1928 and 1929. This is a twelve-page booklet, 3½ by 5 inches, with an attractive cover of light brown. The auxiliary's motto, "Always Faithful," is printed on the cover, and the first inside page gives the list of officers, and of the standing committees.

Mrs. I. E. Henderson is chairman of the ways and means committee, other members being Mesdames C. R. Dickey, Wm. H. Cowger, J. C. Friel, Charlotta Howell, Wm. C. Knox, Earl Page, Lee Smith and G. Oxler. The membership committee consists of Mrs. Wm. H. Dunlap, chairman, and Mesdames J. E. Gornall, Anna R. Ditsch, George Satterlee, W. J. Ernst, Chas. J. Brown and Chas. E. Vegiard.

Those on the flower committee are Miss Myrtle Burke, chairman, Mrs. W. H. Pardee and Mrs. L. M. Enggas. Mrs. R. B. Farley is chairman of the committee for visiting the sick, her assistants being Mesdames H. G. Hayes, E. I. Knapp, E. A. Kuebler, H. Hampel, Eva Enggas and Russell R. Wirt. The entertainment committee consists of Mrs. C. W. Herald, chairman, and Mesdames Frank Smith, J. W. Miller, J. E. Anderson, J. J. Cunningham, Fred Hacker and Arthur Garney.

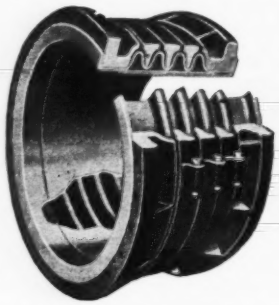
On the third page of the booklet is printed a statement of the aims of the auxiliary. This is followed by a list of hostesses and assistant hostesses for each monthly meeting. Next is the membership list with the address of each member. The last pages are devoted to the constitution and by-laws of the organization.

Pasadena Auxiliary Holds Outing

The Women's Auxiliary to the Master Plumbers' Association of Pasadena, Calif., has been having an active season. In April the last of a series of luncheons was held. In May many of the women attended the convention of the state association at San Francisco. The delegates were Mr. and Mrs. A. R. Benedict, Mr. and Mrs. R. N. Batterson, Mr. and Mrs. W. H. Swihart, J. J. Meskell and C. E. Richardson. In June the merchant plumbers' picnic was held at Brookside Park, Pasadena, lasting from two in the afternoon until nine in the evening. An enjoyable feature of the occasion was the entertainment provided by Fred Walker and his juvenile troubadours. An interesting program of sports also kept everyone occupied. An elaborate picnic dinner was the crowning event of the day. The committee furnished ice cream, cake, coffee and soda waters. Rabbits, salads and many other dishes, brought by the various members, were on the menu. Mrs. C. W. Chapman and her daughter prepared the rabbits for the seventy-five guests, and Mrs. March planned the dishes to be furnished by the others.

The committee in charge consisted of Mr. and Mrs. A. C.

Top picture, standing: Mrs. A. C. Hanson, president of Pasadena auxiliary, and Mrs. C. W. Chapman, sergeant-at-arms. Seated: Mrs. W. H. Swihart, secretary-treasurer. Bottom picture: Members of the auxiliary



The MONEL Metal Sleeve *for* Superheated Steam Service

Now the same dependable leakless service by BADGER SELF-EQUALIZING EXPANSION JOINTS is obtainable in high pressure superheated steam and other high temperature fluid lines. Telescoping monel metal sleeves inside of the joint insures long lasting service on superheated steam and light temperature fluid lines.

The sleeve does not interfere with the free accordian-like movement of the continuous, one-piece corrugated copper expansion element. No stuffing boxes are added. The packless joint affords no chance for leakage. The maintenance is nothing.

Heavy cast iron equalizing rings distribute the stresses. That is why the joints last indefinitely under the severest temperature changes.

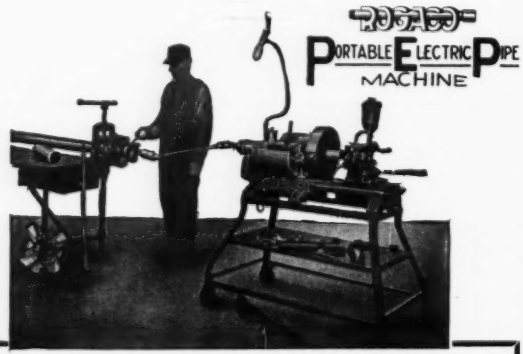
Furnished with flanges or with steel or wrought iron pipe nipple ends for welding into the pipe line.

Write for Bulletin

E. B. BADGER & SONS CO.

75 PITTS STREET :: BOSTON, MASS.

New York: 271 Madison Ave. *Tulsa, Okla.: Mid-Continent Bldg.*



Practical-Portable-Profitable

The ROGACO is the most practical pipe machine of its class on the market today. It cuts off, threads, reams, makes on or takes off fittings, has a wide range and is a sturdy, well-built lathe type pipe machine.

The ROGACO is truly portable. It does not have to be taken down in order to be moved, but can be taken on the job as easily as a chest of tools or a medium sized radiator. The original and only portable-as-a-unit pipe machine.

The ROGACO is a profitable investment—saves time and labor for hundreds of users in 37 states.

Catalog and prices sent on request.

ROBBINS, GAMWELL & COMPANY

PITTSFIELD - - MASSACHUSETTS

Hanson, Mr. and Mrs. W. H. Swihart and R. N. Batterson. Everyone felt that this committee was deserving of much credit for the great success of the affair. Mrs. Hanson is president of the auxiliary.

AIR POLLUTION BY AUTOS

Surgeon General H. S. Cumming of the U. S. Public Health Service recently announced the results of a survey undertaken to ascertain whether a health hazard from carbon monoxide existed in the streets of our large cities, inside auto busses and in repair shops. Fourteen of our largest cities in the country, having a combined population of more than 19,000,000, were visited, and 250 samples of air were obtained for carbon monoxide analysis. These samples were analyzed by the iodine pentoxide method, using a liquid air cooling tube which was shown to be necessary in order to eliminate gasoline vapor, a substance which tends to vitiate the results of the analysis.

Street samples were taken in such a manner as to approach the most congested conditions that may exist at a busy traffic intersection. Hence it is felt that these results indicate the maximum hazard that may exist today in the metropolitan thoroughfares from automobile exhaust gas. The average of 141 tests made in city streets at peak hours of traffic showed a contamination of 0.8 part of carbon monoxide per 10,000 parts of air. Only 24 per cent of all street samples had more than one part of carbon monoxide in 10,000 of air and in only one location, a covered passageway, were there as much as two parts per 10,000. Samples taken inside of auto busses yielded even lower concentrations of carbon monoxide gas.

The figures for street air, when viewed in the light of present day standards of exposure to carbon monoxide, do not reveal the existence of a health hazard from this source in our city streets. The only individual who may possibly be exposed to a health hazard from inhaling street air containing automobile exhaust gas is the traffic officer. This potential hazard may be minimized by diminishing the duration of exposure at the most congested traffic stations.

On the other hand, of the 102 tests made in 27 garages in the 14 cities visited, the average carbon monoxide content was found to be 2.1 parts in 10,000. More than half the samples (59 per cent) contained more than one part of carbon monoxide and 18 per cent of all the samples contained more than four parts of this gas in 10,000 parts of air. These results for repair shops show a dangerous condition that demands the serious consideration of those concerned. This hazard in repair shops may be reduced to a minimum by not allowing motors of automobiles to run longer than 30 seconds unless the car is in necessary motion or the exhaust is connected to the outside air by a direct, air-tight outlet of ample caliber. Without such outlet no automobile engine should be allowed to run indoors, except to reach its berth or to leave, by the shortest route.

All these samples were taken in garages of considerable size. The great danger of life is unquestionably in the small private garage containing one or two cars. Under any circumstances the discharge of an automobile exhaust into a roofed enclosure should be regarded as a hazardous act.

Edward F. Crawford, master plumber, Oswego, N. Y., has been re-elected president of the board of education of Oswego for the coming year. Under Mr. Crawford's administration two grade schools are being built at a cost of more than a half million dollars.

New Business Ventures

Osseo, Wis.—H. O. Vold, formerly of Waukon, Iowa, has engaged in the plumbing and heating business here.

Lewiston, Ida.—Charles Maier has engaged in the plumbing and heating business at 134 Tenth street, having sold his interest in the Empire Plumbing & Heating Co., 1448 G street, to J. J. Eichenberger.

Muskegon, Mich.—John Wagner and Henry Vanderwonde have engaged in business under the name of Wagner Plumbing & Heating Co. at 115 Myrtle street.

City Terrace, Calif.—The City Terrace Plumbing Shop has been opened at 3851 Ramona boulevard under the management of V. J. Kobzeff.

Greensboro, N. C.—Wray, Inc., has been chartered with a capital of $50,000, to engage in the plumbing and heating business, by Allen Moran and Josephine Wray.

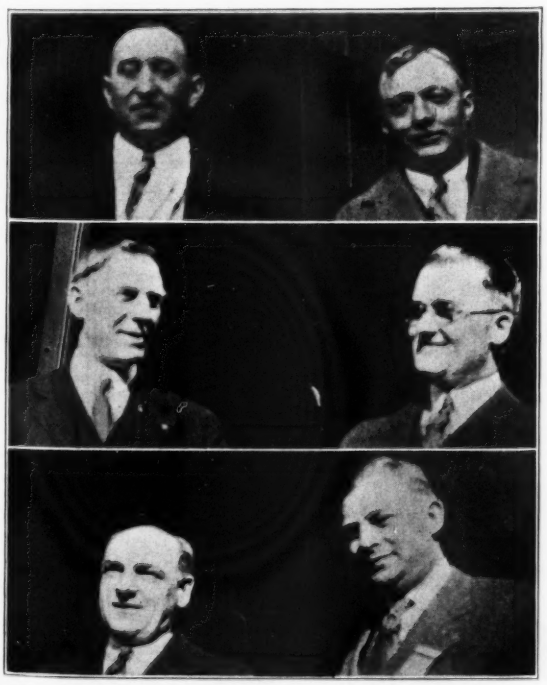
New York, N. Y.—S. L. Snyder and associates have completed the organization and incorporation of the S. L. Snyder Co., with headquarters at 1440 Broadway. It is the plan of the new concern to conduct a general plumbing and heating contracting business.

Grand Junction, Mich.—Haslam & Johnston is the name of a plumbing and heating contracting firm recently established in this city.

Linnton, Ore.—The H. K. Richard Plumbing Co. filed articles of incorporation June 14. Incorporators are E. V. Kessler, S. A. Richard and H. K. Richard.

Detroit, Mich.—The Canvasser Brothers Plumbing & Heating Co., 2323 Barlum Tower, has been incorporated.

Fennimore, Wis.—The Beers Plumbing & Electrical Shop has been opened on South Bonson and West Main



Top picture: Frank Blaesi of Rochester; Alex Cameron of Long Island, N. Y. Middle picture: H. W. Goetting of Syracuse; W. G. Shafer of W. G. Shafer Co. Inc, Syracuse. Bottom picture: Henry Ellett, Ellett-Stempfle Co., Elmira, N. Y.; C. A. Kolstad, Rochester manager of C. F. Church Mfg. Co.—Photos taken at the recent convention of the New York State Association of Master Plumbers

More and more, the tendency is toward something not only highly efficient in heating, but pleasing to the eye as well. McKeesport Radiators accomplish both of these points to greatest satisfaction.

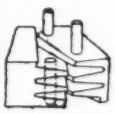
McKEESPORT RADIATION

THE COLUMBIA RADIATOR COMPANY
McKEESPORT, PENNA.

You can get them from your jobber.

Cracked and warped toilet seats soon send customers elsewhere for their plumbing work. Don't take the chance when you can install Built-Well seats and avoid it.

The Built-Well V-Lock Joint



Patented

Sectional view of joint, turned upside down to show how dowels are inserted from bottom. Moisture only makes them tighter.

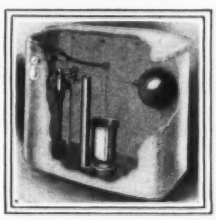
Built-Well Mfg. Co. 300 N. Robey Street Chicago, Illinois

No calking is necessary when you use Raymond Lead Roof Flanges. They are not cast but are made from drawn lead.

When ordering, give size and pitch desired. You don't have to pay any more for genuine Raymonds than you do for imitations.

RAYMOND LEAD WORKS
900 W. Eighteenth St., Chicago, Illinois

CURTIN TANK NOISELESS FITTINGS



A·F·CURTIN VALVE CO. Medford, Mass.

street. The owner of the new plumbing establishment is S. W. Beers.

Los Angeles, Calif.—The Universal Plumbers, Inc., has been chartered with a capital stock of $20,000, by M. S. Winter, M. E. Winter, C. E. Marsh and D. A. Marsh, all of Los Angeles.

Boston, Mass.—The Smith Heating Co. has incorporated with a capital composed of 50 shares of no par value stock, to engage in the heating business. Hyman Smith, 27 Dennison street, heads the organization.

Business Changes

San Diego, Calif.—The Read Bros. Co., 727 F street, is completing a new store room and shop at the corner of Eighth and G streets, possession of which they expect to have shortly. The new building is steel and concrete, with the office, which will be along the Eighth street side, two stories in height, while the remainder of the building will have a mezzanine floor along two sides. The building will be 50x100 feet in size, with ample storage capacity on the adjacent property.

Castle Shannon, Pa.—The Bethel Plumbing & Heating Co., formerly of this city, moved June 30 to 103 Alfred street, Mt. Lebanon, Pittsburgh, Pa.

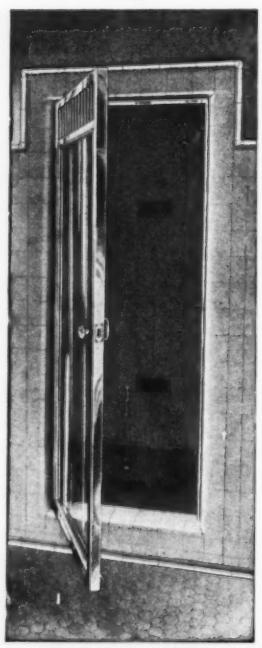
Spokane, Wash.—Mrs. P. J. Dowling has sold the business of the P. J. Dowling Plumbing Co., 613 Monroe street, to S. P. Miller.

Bristol, Conn.—George S. Andrus & Sons, formerly located at 65 Laurel street, have moved into new quarters in the Cameo building at 69 Main street.

New York, N. Y.—Isidore Dobkin, proprietor of the Dobkin Plumbing & Heating Co., 2225 Fifth avenue, has assigned his business interest in that firm to George Rothenberg, 360 West 125th street, who will continue its operation.

San Diego, Calif.—D. A. Deacon, for many years located in the plumbing business at 851 F street, has purchased property, including a brick warehouse, 100x100 feet in size, at 1435 Imperial avenue, and will move his business there in the near future.

Top row: J. A. Hintze, H. R. Wiese, L. V. Drescher and H. J. Hintze, all of Davenport. Bottom row: Colonel William G. Archer, of the Plumbing and Heating Industries' Bureau; F. A. Nelson of Fort Dodge, H. A. Rynearson of Waterloo.—Photos taken at the recent convention of the Iowa Master Plumbers' Convention



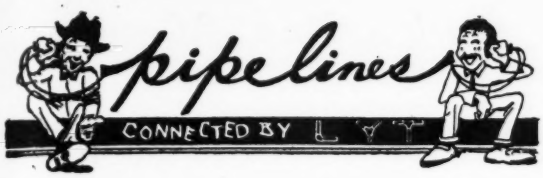
NONPAREIL MODEL

C & S SHOWER DOORS

C & S Shower Doors and Shields can now be furnished in Chromium Plate as well as Nickel Silver. These two wonderful finishes make C & S Bathroom Equipment outstanding for beauty. Only the best of materials—expert workmanship—and reasonable prices. That's the formula for satisfied customers.

Write us for complete sales details.

CRIST & SCHILKEN CO.
Established 1903
500-508 37th St. PITTSBURGH, PA.



MORE SCOTCH

Once there were two Scotchmen playing a golf match. One of them had a paralytic stroke; the other made him count it.

TESTIMONIAL

(Letter received by a tooth paste manufacturer)

Gentlemen:

Ten years ago I began to be troubled with pyorrhea. At that time I began to use your tooth paste which you claim cures and prevents this trouble. Now I can report that I am no longer troubled with this dread disease. I have had all my teeth taken out.

NOT HIS JOB

Magistrate: How often have you been here before?

Prisoner: I thought your honor was doin' the scorin'.

W. G. N., Chicago.

CANNY?

A canner, exceedingly canny,
One morning remarked to his granny:
"A canner can can
Anything that he can,
But a canner can't can a can, can he?"

STATION P. B. F.

MODERN LIFE IS SO COMPLICATED

Mrs. A.: "So you are now living at a hotel?"

Mrs. B.: "Yes. The cook got so haughty and domineering that we decided to simply walk out of the house and show her that we can be just as independent as anybody."

BOSTON TRANSCRIPT.

POOR JUDGMENT

A golfer, who had killed his wife, was up before a judge who was also a golfer. The case was going well for the prisoner—in fact, the judge had indicated that he would return a verdict of "Not Guilty," because he was of the opinion that the incident was justified. However, he asked a few more questions:

"Where did you kill your wife?"

"In the bunker," answered the golfer.

"What did you kill her with?" asked the judge.

"I killed her with my putter," said the golfer.

"Found guilty!" said the judge. "You should have used a mashie."

"SY" SEZ

Your wife may be a wonderful pastry cook, but acrobats make the best turnovers.

There's no danger of America losing its martial spirit. Fifty per cent of our time-expired soldiers re-enlist, and eighty per cent of our divorced men re-marry.

A detour is the longest distance between two driven points.

Just what is a vegetarian supposed to do about animal crackers?

"SY" MARTIN, Owensboro, Ky.

Thrift, says a sign in a bank window, is the father of independence. True—and of a number of good stories.

"I want to be proscrastinated at de nex' corner," said the negro passenger.

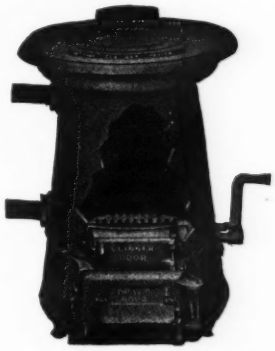
"You want to be what?" demanded the conductor.

"Don't lose your temper. I had to look in de dictionary mys'f befo' I found out dat 'procrastinate' means 'put off.'"

If there is really any value in antique furniture, a lot of people ought to be wealthy when they finish paying for the stuff they started married life with.

L Y T.

CLE-BAR



The Brass Coil Heater

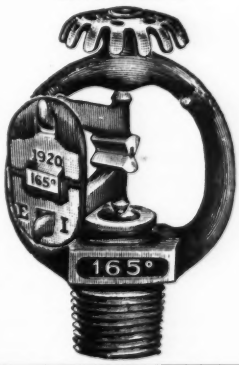
Every CLE-BAR Water Heater is equipped with a brass coil. This means not only longer life but a clean water supply. No matter how long water stands in the heating coils it does not become dirty or clouded and the water deposits do not adhere to the sides of the tubing so as to clog it up.

Write us about full CLE-BAR details. They will interest you.

CLEGHORN CO.
86 Broad St., Boston, Mass.

C S B

SPRINKLER HEADS



C S B

C.S.B. Sprinkler Heads mean lower insurance rates and positive protection for your customers.

They are rigidly tested before they leave our factory and each of them is stamped with the date they are made and the fusing degree.

Write for full information.

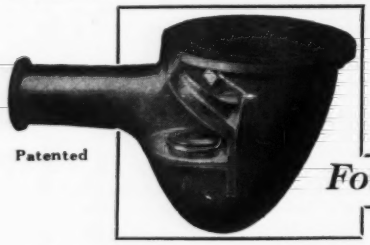
C.S.B. Sprinkler Company
86 Broad St., Boston, Mass.

HOPPERS

Flat Rim Self-Rising Seat

For all public and semi-public places this hopper will be found the ideal equipment. It is sturdy and never gets out of order.

JONES HOLLOW WARE CO.
BALTIMORE :: MARYLAND



Patented

For Safety

To safeguard your customers' health, use Signet Floor Drains. Sewage, gas and germs are automatically kept out by the Signet Trap.

Nothing to get out of order. Brass working parts submerged.

Crampton-Farley Brass Co. Kansas City, Mo.

Tank Fittings of Quality

1856 "McSHANE" 1928

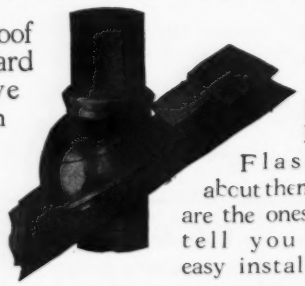
The ORIGINAL Compound Lever Ball Cock. Elevated, Low-Down, Top and Bottom Supply Tank Levers and Valves.

McSHANE BELL FOUNDRY CO.
Baltimore, Maryland

BULLARD ROOF FLASHINGS

Get up on a roof with a Bullard and you've more than half the job done.

Your jobber can supply you.



Ask the users of Bullard Roof Flashings about them. They are the ones who'll tell you about easy installation.

The Bullard Specialty Co., *Tiffin, Ohio*

Bath a Day Movement

THERE are few industries which have as fundamental an appeal as the plumbing industry; and of those few, none has capitalized its appeal with anything which approaches the Bath a Day Movement in constructive value.

Here is a movement which has not had the backing of a single large selling organization, as have some of the well-known national slogans on which hundreds of thousands have been spent. But, by individual effort here, others there, the slogan, "A Bath a Day Keeps You Fit Every Way" has been put over.

Started about seven years ago by "Domestic Engineering," the movement has undoubtedly made thousands of friends for the industry. Manufacturers, wholesalers, contractors—numbers of them in various sections of the country have conducted local efforts to popularize the slogan and to make the public familiar with the service of the master plumber by the distribution of copies of "The Story of the Bath."

If your community has not been familiarized with the movement, write for full details and a complimentary copy of "The Story of the Bath."

Epigrams—For Your Use

A big heart and a big pocketbook seldom travel far together.

* * *

In trying to win a girl's heart a young man often loses his head.

* * *

No one is ever so friendless that he can't find someone to jolly him along.

* * *

Nothing takes the conceit out of a man like being beaten at his own game.

* * *

Perhaps every man has his price, but in most cases it is very elastic.

* * *

A flood of tears indicates troubled waters.

HEAR CONVENTION REPORTS AT SALT LAKE MEETING

The progress of the National Association of Master Plumbers and the work accomplished at the Memphis convention was outlined by National Director William A. Bywater, Henry H. Bockholt, president of the Utah state association, R. D. Evans, president of the Salt Lake City Association of Sanitary and Heating Engineers, and E. G. Harris, past-president of the latter association at the regular semi-monthly meeting of the Salt Lake organization held July 6 in the association suite in the Hooper building.

The annual summer outing of the association will be held during the latter part of July or first of August, according to tentative arrangements. A. H. Higham, a member of the board of governors and past-president of the Utah state association, is chairman of the committee which also includes Mr. Bockholt and Peter P. Erskine.

Curtis Evans will handle the office work of the organization while Secretary Ross Dudley is away on a two-week vacation, while Sylvester Walsh, secretary of the Utah state association, John W. Dudley, past-secretary, and the Salt Lake secretary, are leaving on a ten-day fishing trip to Idaho.

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DOMESTIC ENGINEERING, we are proud to say, is a member of the A. B. C.

DOMESTIC ENGINEERING

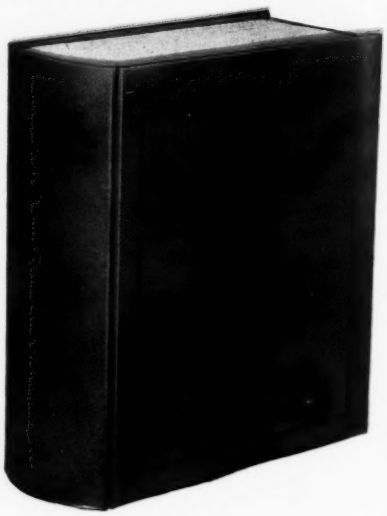
The Plumbing and Heating Weekly

1900 Prairie Avenue CHICAGO

Specifications

and

Domestic Engineering Catalog Directory



Standard Catalog Size
7¾ by 10⅝ inches
2000 pages — 13000 illustrations
Price $5.00 prepaid

When the architect or general contractor hands you the specifications on a job and asks you to put your bid in at once, you have to work fast, but you have to be accurate, too.

No doubt the specifications call for many items that are designated only by trade names. Of course, you can't be expected to carry in your head the names of all the manufacturers and the trade names they use. Neither is it necessary to do so, because **Domestic Engineering Catalog Directory** fulfills these duties most efficiently.

Between the covers of this exceptional book over 2000 items that are used in the plumbing and heating field are listed together with the names of the manufacturers making them and any trade names they use. This feature greatly simplifies the problem of checking up an item, as it only takes a moment to find out just who makes it by referring to **Domestic Engineering Catalog Directory.**

Then too, it is quite possible that the very item you are worrying about is completely illustrated and described in the catalog section of the Directory.

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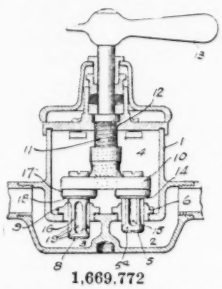
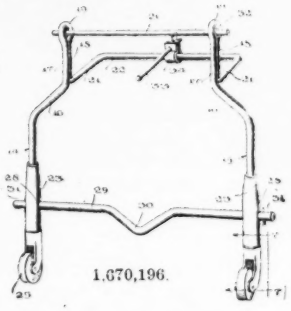
PATENTS

Heating Department

1,669,772. Valve. Edward F. Niedecken, Milwaukee, Wis. A mixing valve comprising a casing having an inlet chamber for cold water, an inlet chamber for hot water, and a mixing chamber, a cold water valve controlling communication between the cold water chamber and the mixing chamber in the usual manner, and a hot water valve controlling communication between the hot water chamber and the mixing chamber in the usual manner during all of the stages of the ordinary operation of the mixing valve and further characterized by the provision of means on the hot water valve designed to throttle down the flow of hot water to a stream of relatively small volume after the cold water valve has shut off the supply of cold water and as the hot water valve is moved beyond full open position.



1,669,772



1,670,196.

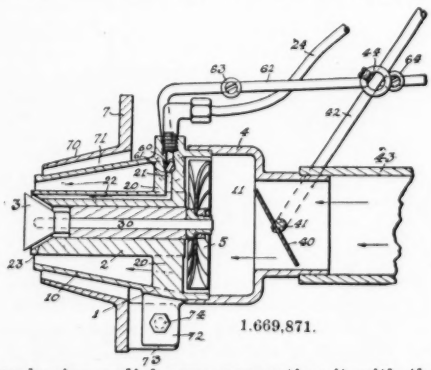
1,670,196. Radiator-Transporting Apparatus. Joseph B. Heiser, Williamsport, Pa. A device for transporting radiators comprising a frame including a pair of spaced arms having return bent portions, the return bent portions forming with the arms eyes, a bar received by the eyes, and a cross bar formed integrally with the return bent portions.

* * *

1,669,840. Powder for Welding Castings, Particularly of Gray Cast Iron. Friedrich Politz, Breslau, Germany. A flux for use in autogenous welding of cast iron, consisting of a welding powder containing a small percentage of iron suboxide.

* * *

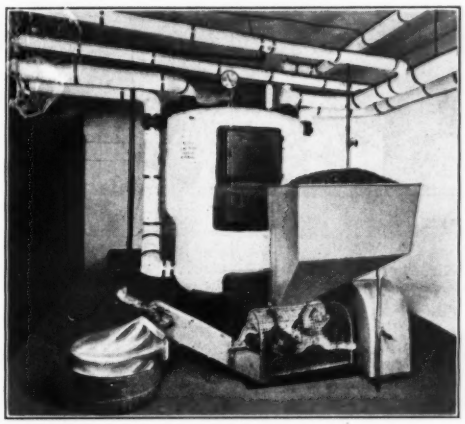
1,669,871. Oil Burner. Walter B. Fogh, Seattle, Wash. An oil burner nozzle comprising a central core and a surrounding shell forming an annular air supply channel,



1,669,871.

said core having radial arms connecting it with the outer shell, one of said arms and the core having passages for conveying oil to the inner end of the nozzle, said core having an axial shaft-receiving bore which at its inner end is enlarged to include the discharge end of the oil supply

Your Customers *Will* THANK US *Both*



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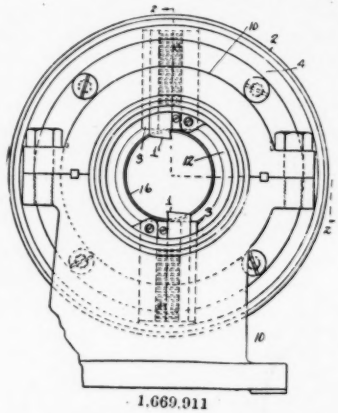
channel, a shaft journaled in said core and a conical distributor head carried by said shaft, within the enlarged inner end of said core and with its large end extending beyond the core end.

* * *

1,669,911. Machine for Cutting Off Pipes and the Like. Herman W. Oster and Glenn D. Sleeth, Cleveland, Ohio, assignors to The Oster Manufacturing Company, Cleveland, Ohio. In a machine of the character described, the combination of a frame, a casing rotatably mounted

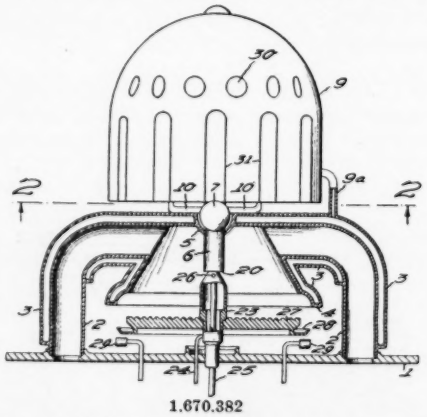


1,669,911

therein having a coaxial bore, a radially adjustable cutter-carrying block in said casing, a sleeve longitudinally shiftably held in said casing, and operative connections between said sleeve and block whereby shifting of the former serves to adjust the latter, said connections including a pinion journaled about a transverse axis in said casing and racks on said sleeve and block respectively meshing with said pinion.

* * *

1,670,382. Oil Burner. Theodore A. Ross, Chicago, Ill., assignor of one-third to Steve Pappas, and one-third to Theodore Dadas, Chicago. In an oil burner, a base plate, air pipes leading up and toward each other from said base plate, a water packet for said air pipes, a steam chest supported by said water jacket, a steam passage-



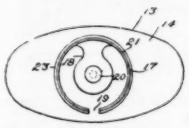
1,670,382

way integral with said connecting said dome and water jacket, a steam pipe opening into said steam chest and in said dome at the apex thereof, a valve float in said dome operatively controlling the valve in said column, a water reservoir communicating with said column, a liquid fuel pipe extending longitudinally through said water reservoir and opening horizontally through the sides thereof, steam ports located in the mouth of said steam passageway above the mouth of said liquid fuel pipe, a flame

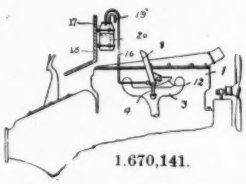
spreader carried by said water reservoir, and gas jets arranged below said flame spreader.

* * *

1,669,998. Means for Attaching Name Plates and the Like to Radiators. Skidmore O'Hara, Waltham, Mass., assignor to O'Hara Waltham Company, Waltham, Mass. In combination with an insignia plate to be attached to the radiator shell of an automobile, an attaching means consisting of a semi-annular spring composed of a band of spring metal, the said spring having a short open space between the ends thereof and an arm projecting radially inward from one edge of said spring, said arm being attached to the insignia plate at a point substantially co-axial with said spring.



1.669.998.

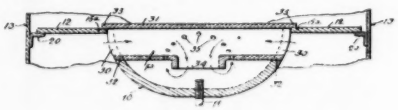


1.670,141.

1,670,141. Humidifier. David R. Collins, Duluth, Minn. In a humidifying device, a valve control mechanism of the type described comprising in combination a valve having intake and discharge connections, a wind controlled vane mounted upon the controlling stem of the valve for operating same, a combined anchoring means and stop for co-operative engagement with the vane carried by the valve, and a spring member connecting the vane with the anchoring means for normally holding the valve closed.

* * *

1,670,386. Oil Burner. Charles W. Sievert, Los Angeles, Calif. A liquid fuel burner of the character described, comprising a liquid fuel bowl with an open upper



1,670,386.

end and having at its upper edge a flange formation forming a burner plate, the wall of the bowl having air pipe openings extending below the burner plate, and an air pipe extending across the bowl and having open ends resting in the air pipe openings and having a central downwardly facing air outlet adapted to deliver air downwardly into the center of the bowl, the air pipe being substantially semi-circular in cross-section and having a flat upper wall substantially flush with the burner plate, and means to prevent rotational displacement of the air

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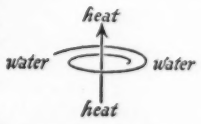

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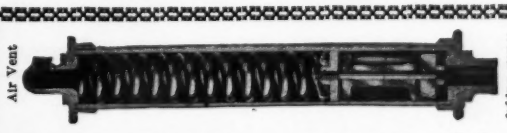

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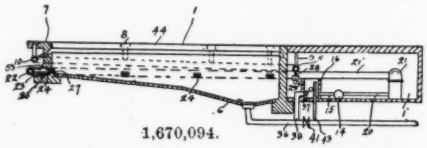
Fig. 9

By removing the bonnet and inserting a nail or piece of wire through the disc lock-nut and stem, radial disc seat can be reground many times without removing valve from the line. Available in sizes of ¼ to 3" for pressures up to 250 lbs.

pipe with relation to the bowl and plate, said last mentioned means embodying extensions of the upper air pipe wall which rests upon the burner plate.

Plumbing Department

1,670,094. Swimming Pool. Wayne A. Becker, Covington, Ky., assignor of one-half to S. L. Kring, Cincinnati, Ohio. A circulating system for swimming-pools including in combination an overflow gutter surrounding the pool, an influent piping system arranged near the bottom of the

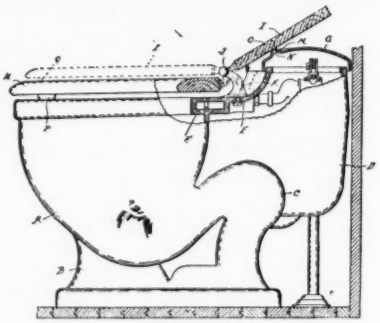


1,670,094.

pool, an effluent piping system arranged near the top of said pool and communicating with said gutter, an effluent piping system arranged at the bottom of said pool and communicating therewith, piping connections, including a pump, establishing communication between said systems, and a common means to receive the water from said effluent piping systems, and means adapted to control the quantity of water delivered from said effluent system.

* * *

1,670,322. Combined Cover Lock and Bumper for Water-Closets. James M. Teahen and William Taylor, Detroit, Mich., said Taylor, assignor to said Teahen. In a



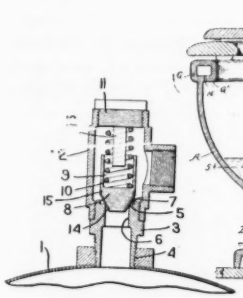
1,670,322.

water closet the combination with a bowl and a tank in rear thereof extending for a slight distance only above the bowl, of a seat and cover hingedly attached to a portion of said tank at a point permitting the turning back of the same into a rearwardly inclined position for resting on the top of said tank.

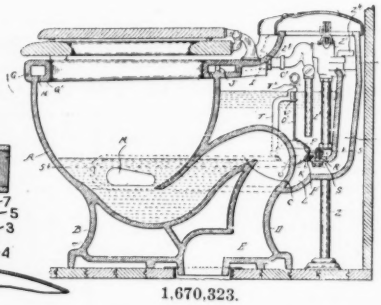
* * *

1,670,764. Relief Valve for Kitchen Boilers and the Like. Edward F. Donnelly, Malden, Mass. In a relief valve for kitchen boilers and the like, the combination with a valve casing having a sharp edge valve seat formed by the junction of two annular surfaces at right angles to each other, of a valve having a conical end which extends partially through the valve seat and which engages the valve seat edge merely with a line contact, said valve being formed of fusible metal, the conical portion of the valve which engages the valve seat being provided with a jacket of metal harder than the fusible metal and which will not be indented by the pressure of the valve against the sharp edge valve seat, a spring for holding the valve yieldingly against its seat, said valve having at its upper end a relatively deep recess to receive the lower end of the spring, said recess being of a size to fit the spring, whereby the spring and the walls of the recess co-operate in maintaining the valve in true alignment.

1,670,323. Combined Water-Closet Bowl and Tank. James M. Teahen and William Taylor, Detroit, Mich.; said Taylor assignor to said Teahen. In a water closet, the combination with a bowl, of a flushing tank integral with said bowl and having an apertured bottom approximately at the level of the water seal in said bowl, a



1,670,764.

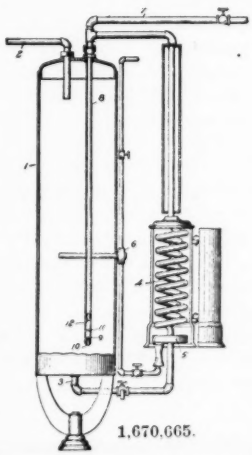


1,670,323.

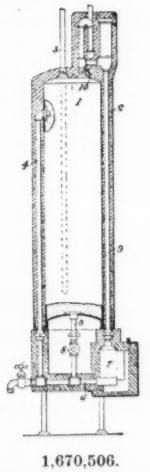
channel beneath the bottom of said tank extending to the bowl and opening therein beneath the normal water seal, a flushing valve controlling the aperture in said bottom, and an extension of said channel rising within the tank to above the normal water level therein and open at its upper end to constitute an overflow.

* * *

1,670,506. Electric Water Heater. Axel Johnson, Oakland, Calif. In combination with a boiler provided with a water inlet discharging thereinto near its bottom, a pair of water outlets leading therefrom, one connecting with the boiler above its transverse center line and near



1,670,665.

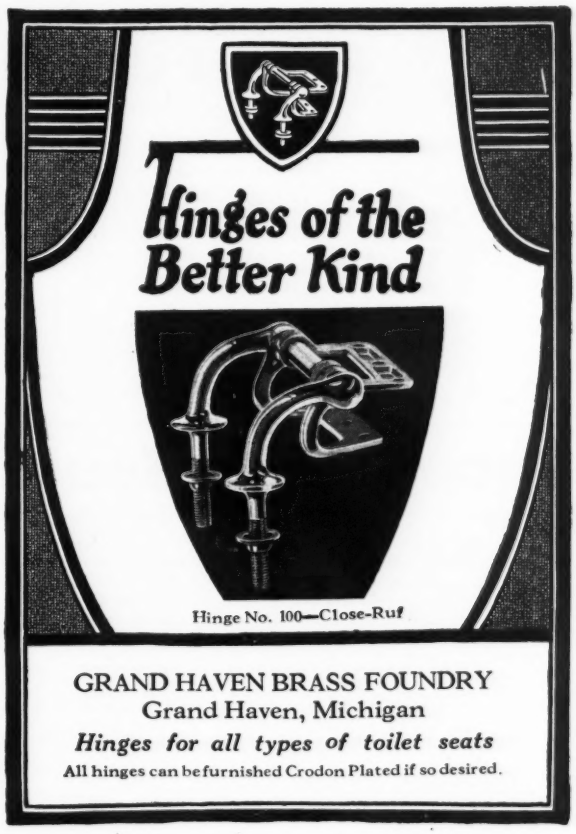


1,670,506.

its top and unobstructed to afford a water flow from the upper portion of the boiler at all times, and the other connecting with the boiler near its bottom, a valve in the latter outlet controlling the water flow therethrough, a heater casing with which both of said water outlets connect, a water outlet extending from the heater casing, a connection between said latter outlet and the boiler at its top, and a heating element within said heater casing.

* * *

1,670,665. Water Heater. William J. McClurg, Pittsburgh, Pa. In a water heater the combination of a tank having inlet and outlet openings arranged respectively adjacent to opposite ends of the tank, a heater connected to the outlet of the tank, a connection extending from the heater into the tank and adapted to discharge water flowing from the heater into the tank at a point intermediate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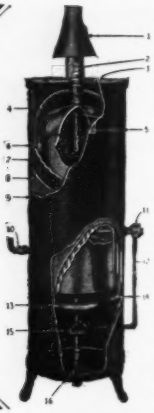

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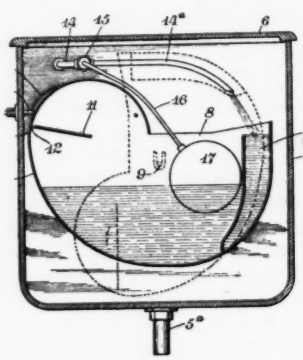
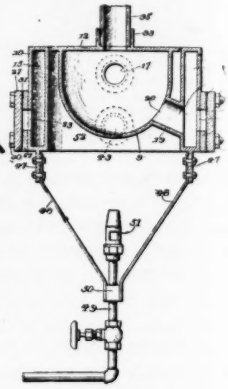
the inlet and outlet of the latter, means for preventing a reverse flow of water through such connection, a service pipe connected to the heater, and a thermostat disposed within said tank in the region of said discharge connection for regulating the operation of the heater to maintain a substantially constant temperature of the water in said tank.

* * *

1,670,975. Closet-Flushing Tank. Martin B. McCleery, Pleasantville, Ohio. A closet bowl flushing device including a box having an outlet, a shell having a mouth leading volutely to a closed cavity above the plane of said mouth when in normal horizontal position, said shell being laterally pivoted in the walls of the box so as to be out of balance when filled with water to discharge by gravity when released from normal position, and also out of balance to return to normal position when emptied of water, means for automatically supplying water to said shell when emptied, means for automatically latching said shell upon its return to normal position, and means to release said latch at will.



1,670,975.

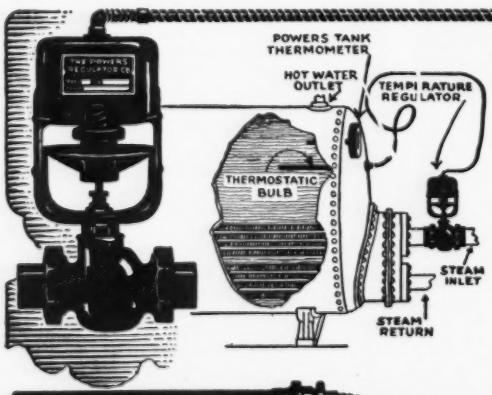


1,671,036

* * *

1,671,036. Water Heater. William V. Malone, Joplin, Mo. A water heater comprising a pair of water heating chambers, one surrounding and spaced from the other, circulating connections between said chambers, a water supply connection opening into the outer chamber, and an independent outlet connection for each of chambers.

D. A. Deacon, master plumber at 851 F street, San Diego, Calif., left recently for an extended trip through the industrial centers of the East. He expects to go as far east as Boston and New York, to be gone about six weeks.



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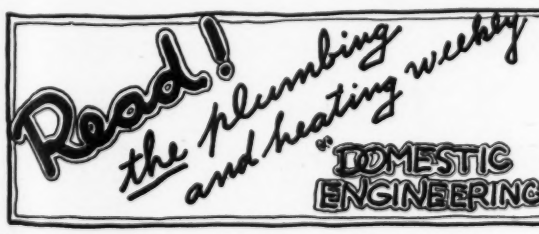

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